NEW
HOUSEHOLD
PHYSICIAN

THE

HOUSEHOLD PHYSICIAN

A TWENTIETH CENTURY MEDICA

A PRACTICAL DESCRIPTION IN PLAIN LANGUAGE OF ALL
THE DISEASES OF MEN, WOMEN AND CHILDREN
WITH THE
LATEST DISCOVERIES IN MEDICINE AND MOST APPROVED METHODS OF
TREATMENT. BY A CORPS OF EMINENT SPECIALISTS,
PRACTISING PHYSICIANS AND SURGEONS

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HOMŒOPATHIC TREATMENT
OF DISEASES

With the Latest Directions for the
Selection and Use of Homœopathic Remedies

BY

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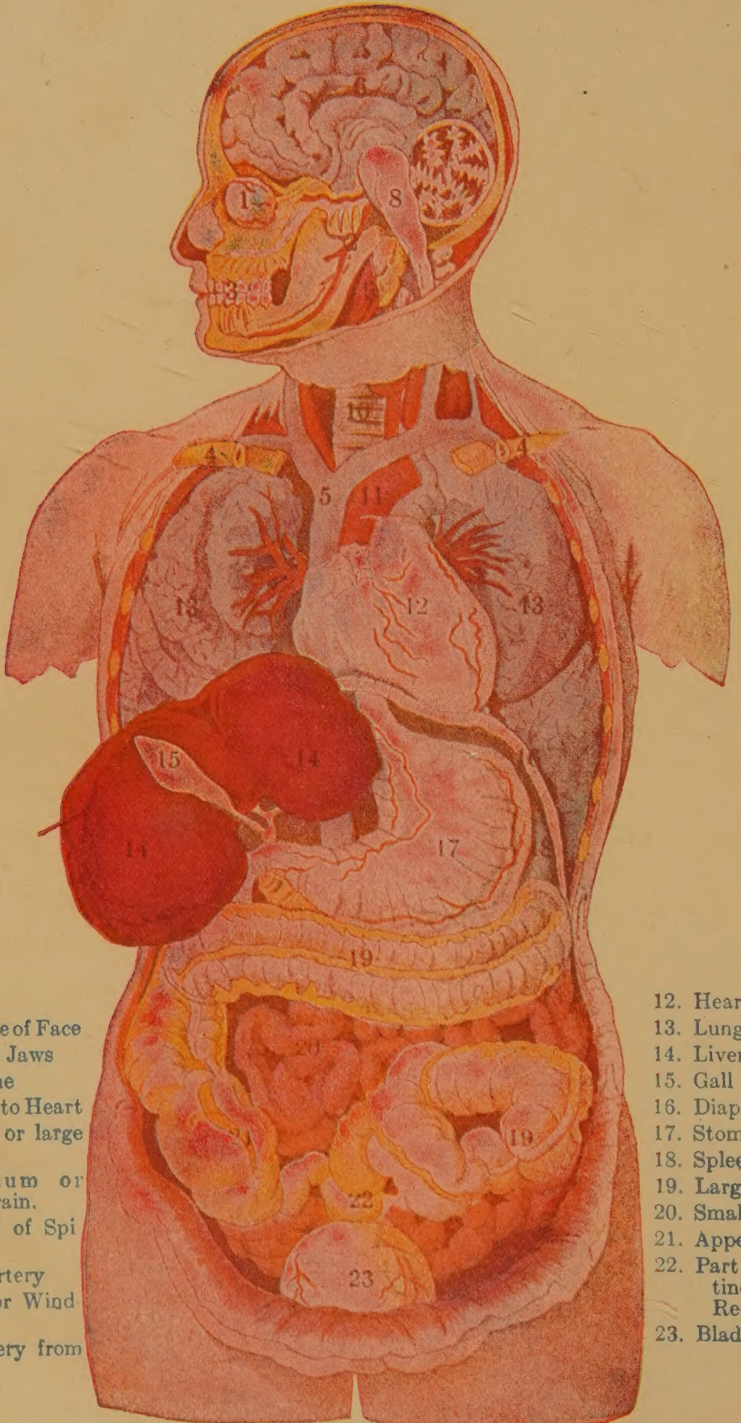
IMPORTANT NOTICE

For Forms of Homœopathic Medicines and their Administration, see page 683.



1. Eyeball
2. Main Nerve of Face
3. Teeth and Jaws
4. Collar Bone
5. Main Vein to Heart
6. Cerebrum or large Brain
7. Cerebellum or small Brain.
8. Beginning of Spinal Cord
9. Carotid Artery
10. Trachea or Wind pipe
11. Main Artery from Heart

12. Heart
13. Lungs
14. Liver
15. Gall Bladder
16. Diaphragm
17. Stomach
18. Spleen
19. Large Intestine
20. Small Intestine
21. Appendix
22. Part of large Intestine called the Rectum
23. Bladder

THE INTERNAL ORGANS OF THE HUMAN BODY.

HOMŒOPATHIC TREATMENT OF DISEASES

By A. T. LOVERING, M.D.

SPECIAL ATTENTION

IS CALLED TO THE FOLLOWING FOUR PAGES BEFORE USING HOMŒOPATHIC REMEDIES

The enlightened and liberal policy of the publishers of this comprehensive work on the practice of medicine, will be thoroughly appreciated by the people for whom it is written when they take note of the fact that no money or pains have been spared to obtain every well tested method of preventing and curing disease to include in this volume.

We therefore introduce here the Homœopathic Treatment of Diseases for the benefit only of those who are confirmed "Homœopathists."

All medicines and drugs prescribed in "Homœopathic Treatment" must be prepared by a physician or Homœopathic Druggist.

FORMS OF MEDICINE AND ADMINISTRATION.

Homœopathic medicines must be taken only in the form of small pellets or disks in strength of what is called 2 x, or 3 x.

Homœopathic remedies are prepared on the decimal scale, as it is called, one part of the crude drug being added to nine parts of alcohol or finely powdered milk sugar, as the case may be, to make the first decimal, or 1 x.

One part of the first decimal, 1 x, added to nine parts of milk sugar or alcohol makes the second decimal, or 2 x.

One part of 2 x added to nine parts of milk sugar or alcohol makes the third decimal, or 3 x.

When the strength of a remedy is not specified in the following pages, the third decimal should be used. Medicines should be obtained either in the medicated pellets or disks.

When 2 x is administered to the patient, only two pellets or one disk not oftener than specified, but in most cases once every hour, is sufficient.

When 3 x is administered to the patient, only three pellets or two disks should be given not oftener than specified, but in most cases once every hour is sufficient.

SELECTING AND USING REMEDIES.

The symptoms, not the disease by name should be treated, and when in the course of a disease the symptoms change, another remedy will be needed. Do not change a remedy, however, as long as the patient is improving, and when it seems desirable to administer another remedy, omit the giving of any for two or three hours.

The repetition of a dose is almost invariably mentioned in connection with the disease. When not otherwise specified, three pellets or one disk may be understood as constituting a dose.

If a dose is forgotten, never double the next one.

As the patient improves, the intervals between giving the remedy may be lengthened, i. e., from once an hour to once in two hours, and so on.

A dose two or three times a day is sufficient in chronic cases, and the longer a condition has continued the more time should be allowed for favorable results from the action of the remedy to become manifest.

In general it may be said that the use of tea, coffee, alcoholic beverages, or highly spiced food should not be used as they are hostile to the action of homœopathic preparations.

It is absolutely necessary if you wish to use Homœopathic Treatment to purchase a Homœopathic Medicine Chest, see page 890 (unless you live in a large city where there are Homœopathic Druggists); this keeps the medicine from sunlight, dust and breakage.

General Considerations.

ELSEWHERE in this book the subjects of baths, diet, medical gymnastics, the management of the sick room, etc., are discussed at length. It is, therefore, unnecessary to mention them here except incidentally, but their importance can hardly be too greatly emphasized. Health is a very precious possession, and one that should never be treated lightly. Once lost it is often never regained, or only regained after much suffering or expenditure of time and money. The observation of the common laws of right living will prevent a host of ailments. No dissipation of any of the body's powers or functions should be indulged in. Pure thoughts, pure actions, plenty of work, but no overwork, sufficient recreation and outdoor exercise, fresh air in the house, the daily sponge bath with friction, a reasonable amount of sleep in a well ventilated room, keeping the feet dry, drinking several glasses of water each day between meals, wearing loose and suitable clothing, the avoidance of stimulants and over-eating, the cultivation of amiability are all aids to health that nothing else equals. No medicines will take their place.

Again, when one is ill good nursing is highly desirable, and in acute diseases especially will often be the means of turning the scales of life and death in the patient's favor. A trained nurse should be secured if possible; sick persons often make much better progress in the hands of a stranger. If some member of the family must act as nurse she should implicitly obey the doctor's directions, and not let her interest in the patient cause her to do anything contrary to the doctor's orders.

Diseases of the Ear.

Inflammation of the External Ear.

INFLAMMATION and swelling of the visible portion of the ear is not infrequent, and is usually due to injury from an ear pick or other instrument, to lack of cleanliness coupled with some abrasion of the skin; unsanitary surroundings; use of lotions containing harmful ingredients. Inflammation may be superficial, or affect the deeper tissues causing severe pain and swelling, and even little boils.

Aconite.—Two to five drop doses every hour in the beginning of sudden, severe inflammation, with fever, restlessness, great pain locally, and burning headache, flushed face, constant thirst, or, a little later, when the temperature rises, the pulse grows rapid, and pulsation is felt in the ear, give *Ferrum phos.* a dose every hour.

Belladonna. — Throbbing headache; tearing pains in the ear; much congestion of head and face; mouth dry and hot and throat bright red; alternate chill and heat. A dose every hour.

Hepar Sulph.—Unhealthy condition of the skin; sticking pain in the ear which is sensitive to touch; itching of the entrance to the ear; suppuration, with thin, bad smelling pus. Give as above.

Picric Acid.—Recurring boils of the external ear in debilitated cases; also acute or chronic localized inflammation and tenderness, with debility. Give as above; in chronic cases, three times a day.

Calcarea Carb.—A valuable remedy in these cases in persons of a scrofulous constitution. The skin of the ear is thickened and red, and the entrance filled with cheesy pus;, or there is ulceration, and the formation of exuberant granulations. A dose three times a day.

In the beginning of the inflammation apply ice compresses, or paint the surface with tincture of *Iodine*. If a boil develops and pus forms, it must be evacuated; cleanse with a saturated solution of *Boracic acid* in alcohol, and continue the cold applications. Treatment with the borax and alcohol should be repeated two or three times a week until recovery is complete. The patient should rest, eat unstimulating food, and avoid the use of alcohol in any form.

Eczema of the External Ear.

ECZEMA may be due to local cause such as insect bites, the wearing of earrings, irritating dust as among metal-workers, parasites from the scalp, also to diseases of the stomach, kidneys, intestines or uterus, and to rheumatism and gout. Remove the cause.

The usual itching and sense of heat marking the beginning of eczema is often attended by fever in children. Small reddish pimples first appear, and these become watery or pustular. When they burst, crusts form. The acute form lasts from four to six weeks; if the original cause persists, eczema of the moist variety ensues.

Arsenicum.—Dry, scaly, bran-like eruption, with itching and burning, worse from scratching and at night; better in warm air.

Graphites.—Eruption with moist, sticky oozing, and the whole skin of the ear looks unhealthy. Rawness and soreness, especially behind the ears.. The patient feels better in the open air.

Mezereum.—Red, moist eruption covered with thick, hard crust; with intense itching extending even into the ear passage; worse at night and from scratching.

Rhus. Tox.—Swelling, burning, itching and tingling of the skin, with watery vesicles around which the skin is red and angry looking; itching better from scratching.

Before using Homeopathic Medicines read pages 681 to 684.

Kali Mur.—Dry, scurfy eruption; obstinate cases in children, with indigestion, constipation, and sores at the corners of the mouth.

A simple dusting powder of starch, oxide of zinc, lycopodium or rice is the best dressing for acute dry eczema; for the moist eruption apply oxide of zinc ointment, or one per cent. ich hyol ointment. Crusts should first be removed by softening them with olive oil or vaseline. As emphasized in the beginning, the removal of the cause of the affection is of great importance, also regulation of diet, and attention to all hygienic rules.

Earache.

The pressure of hardened wax or some foreign body may cause earache, or exposure to cold or wet, defective teeth, digestive disturbances, or the abuse of quinine. Earache may be a simple neuralgia or symptomatic of acute catarrhal inflammation of the middle ear. Douching the nose is not an infrequent cause of ear troubles.

Aconite.—Recent inflammation from cold or cold winds; ear hot, very painful, and sensitive to touch. *Ferrum phos.* frequently gives even greater relief.

Belladonna.—Severe, boring, or sudden shooting pains in the ears, darting from one ear to the other, with chilliness and great restlessness

Chamomilla.—Stabbing, cutting, unbearable pains, especially in nervous children; child very fretful, and, if little, wants to be carried all the time.

Pulsatilla.—Sharp, tearing, *pulsating* pains, worse at night, coming in paroxysms, increasing in severity; ringing in the ears and deafness; earache in highly sensitive persons, and in children of that type.

Magnesia Phos.—Purely nervous earache, with pain back of the ear also; worse in cold air, and from washing the face in cold water; better from hot application

Plantago.—Tearing pains like neuralgia, especially when the teeth are affected.

A dose of the indicated remedy may be taken every fifteen minutes, increasing the intervals as the pain subsides. A hot water bag, bag of hops or salt heated in the oven may alleviate pain, or heat in a teaspoon one part of tincture of aconite, one part of laudanum to two parts of sweet oil, and drop two or three drops into the ear, or apply on absorbent cotton. Mullein oil may be used the same way. Steam from a radiator valve or spout of a teakettle conducted through soft rubber tubing to the ear often proves very soothing. The core of a baked onion applied to the ear will often give relief.

Special attention should be paid to keeping the feet warm and dry, and to regulating the diet. Baths should always be followed by friction.

Running of the Ears.—*Otorrhœa.*

THIS is a symptom, not a disease in itself. It may follow acute catarrhal inflammation of the ear, or measles, scarlatina or diphtheria, and is most common in debilitated individuals, or those having a scrofulous constitution. There is seldom much pain.

Mercurius Viv.—Thick, bloody or offensive discharge, with swelling and tenderness of the glands about the ear, especially when the discharge follows measles or scarlatina.

Calcarea Carb.—Scrofulous individuals inclined to be fat; flesh is flabby; head sweats; white, thick, sticky discharge, tendency to the formation of little growths in the ear.

Silicea.—Small amount of bad smelling, thin discharge, with ulceration of lining membrane of the ear or disease of the bones.

Hepar Sulph.—Heat and discomfort in the ear which is very sensitive to touch; slight, sour and offensive discharge.

A dose of the indicated remedy three times a day. The ear should be gently syringed with warm water, a soft bulb syringe being preferable that the stream of water may not be forcibly ejected into the ear. After syringing instil peroxide of hydrogen, dry the ear gently but thoroughly with small bits of absorbent cotton, which may be loosely wound on a toothpick, then, with a powder blower blow in a little boracic acid powder.

Constitutional treatment is important; change of air; a liberal, nourishing, unstimulating diet, especially vegetables, milk, cream, cod liver oil. A good preparation of iron may be needed, and frequent sea salt baths with friction, also plenty of fresh air and sunshine.

Deafness.—*Hardness of Hearing.*

DEAFNESS may be due simply to constitutional debility; to sudden blows or loud noises; ulceration, perforation or rupture of the ear drum (tympanum); accumulations of wax; inflammation of the lining mucous membrane, and suppuration; foreign bodies in the ear; hysteria; kidney or brain disease, paralysis of the nerve of hearing, etc.

Cinchona.—Deafness with ringing, humming, roaring or ticking sounds in the ears; vertigo; after loss of blood, or blows, the firing of guns, or other concussion.

Before using Homeopathic Medicines read pages 681 to 684.

Ferrum Phos.—After catching cold, in cold, windy weather, or during general debility with poor blood supply; ringing the ears; rush of blood to the head.

Chenopodium.—Deafness to the sound of the voice, but passing of vehicles are heard; annoying buzzing in the ears; progressive deafness.

Nux Vom.—Hardness of hearing, and buzzing, tingling, whistling noises in the ear, especially while eating, with indigestion.

Hydrobromic Acid.—Deafness, with pulsating ringing in the ears, and great nervousness. This acts as a sedative, and may be prepared by adding thirty drops to three tablespoonfuls of cold water and adding a little sugar. Take two teaspoonfuls every hour.

Pulsatilla.—Deafness following measles, also with darting, tearing or pulsating pain in the ear. If there is a discharge, it is thick, yellowish or yellowish-green.

Causticum.—Difficulty in hearing due to inability to identify the sounds; confusion of hearing; words or steps re-echo in the ears.

Phosphoric Acid.—Roaring in the ears with difficult hearing in nervous and debilitated individuals.

Also *Magnesia phos.* for deafness, or dullness of hearing from weakness of the auditory nerve. *Mercurius viv.* catarrhal deafness caused by a cold or chill, or occurring in syphilitics. *Calcarea carb.* Deafness in scrofulous persons with thickening of the lining membrane of the ear, and enlarged tonsils. *Sulphur* after the abuse of mercury, or in hardness of hearing due to suppressed eruptions. *Belladonna* for deafness following scarlatina.

A dose of the indicated remedy may be given every four hours. The general health must be improved, and the cause of the local condition discovered and removed. Many cases require the skilled care of a specialist. Proper hygiene of the ears prevents many ear troubles. Never box a child's ears, never close healthy ears with cotton unless going into a machine shop or other noisy place or when the entire body is to be submerged as in sea-bathing; never let water run into the ear while shampooing the hair or taking a bath; do not scratch the ear or introduce pins, hair pins, pencils, etc. The excessive use of alcohol and tobacco injures the nerves of the ear. Do not allow the teeth to become or remain decayed.

Diseases of the Eye and Lids.

Inflammation of the Eyelids.—*Blepharitis.*

This common affection commences as a simple congestion of the lid border, making the lids look red and swollen. There is slight burning and smarting, worse from cold winds, smoke, dust and a bright light. The lids adhere in the morning, and a sticky secretion forms dry scales or scabs, beneath which in pronounced cases will be found a raw or ulcerated surface. Pus may form, the eyelids become thickened and the eyelashes fall out. Lack of cleanliness; poor hygienic surroundings; eruptive diseases; the irritation of smoke, wind and dust, and late hours are the usual causes, and especially in young and scrofulous persons, who may or may not have imperfect vision.

Aconite.— Acute inflammation from cold winds or dust, lids red and swollen; great heat, dryness, burning and sensitive to the air. A dose every two hours.

Pulsatilla.—Inflammation of the lids resulting from high living or fat food, and when accompanied by acne of the face; profuse, bland discharges. Give as above.

Hepar Sulph.—Acute inflammation, especially when suppuration seems imminent or has taken place; the lids throb and are sensitive to touch; feel better from warm applications. Give as above.

Calcarea Carb.—Scrofulous, "pot-bellied" children who sweat much about the head; eyelids red, swollen and hard. A dose three times a day.

Mercurius Sol.—Thick, red, swollen, ulcerated lids, sensitive to heat or cold and to touch; profuse acrid watering of the eyes; cutting pains, worse at night; syphilitic persons especially. Give as above.

Antimonium Crud.—Lids adhere on waking in the morning, burn on being opened; eyes dread the light; eyelids itch and burn, and are thickened. Give as above.

Also *Argentum nit.* Inflammation of the lids involving the eyelashes, better from cold air and cold applications. *Apis.* Eyelids much swollen, red, puffy; itching of eyes and lids. *Graphites.* Chronic cases in scrofulous persons subject to eczema, chiefly on the head and behind the ears; edges of eyelids slightly swollen, and covered with dry scales or scarfs; the outer corners of the eyes may crack and bleed on opening the lids.

Simple cosmoline or vaseline may be applied to the margins of the lids to prevent adhesion, but two grains of the yellow oxide of mercury to two drachms of vaseline, well mixed, is even better. In chronic cases where graphites is indicated internally, two grains of the crude drug may be added to the vaseline in place of the mercury, for external application. Improve the general health, and have any error of refraction corrected. When pus forms on the lids, they may be cleansed with peroxide of hydrogen.

Twitching of the Eyelids.—*Blepharospasm.*

CHILDREN are often affected, especially during their early school years, with undue winking of the eyelids, associated, at times, with jerky movements of the muscles of the face. This is sometimes of merely nervous origin and occurs also in nervous, delicate adults. When from a foreign body, decayed teeth, inflammation of the eye, ulcer of the cornea, or errors of refraction, remove the cause, and institute proper treatment. When of nervous origin, resort to electricity may be necessary, but most cases can be cured by one of the following remedies:

Agaricus.—Twitching of the lids, with a feeling of heaviness in them, relieved during sleep, and sometimes temporarily by washing in cold water; spasms of the lids. The principal remedy, two-drop doses of the tincture, twice a day.

Ignatia.—Constant winking of the eyelids, with spasmodic action of the muscles of the face in sensitive children or adults, who weep or are frightened easily, and are subject to headache and neuralgia. A dose twice a day.

Cicuta.—Twitching or spasms of the eyelids, with tendency to squint. Give as above.

Stye.

A STYE is a small, painful boil on the eyelids attended by heat, redness, swelling and rapid suppuration. A debilitated condition favors the formation of styes, especially in a scrofulous person; also, exposure to winds, eye-strain, chronic inflammation of the lids or of the covering membrane of the eyeball. In the beginning there is a circumscribed redness and swelling on the edge of the lid, with throbbing pain.

After exposure to cold winds or straining the eyes, threatened stye, or with general inflammation take *Aconite*. *Pulsatilla* will often prevent the formation of pus if given when the first signs of swelling and inflammation appear; especially serviceable for those of a scrofulous constitution. *Hepar sulph.* When pus forms, and *Sulphur* after the stye has healed to prevent recurrence, a dose of the latter remedy night and morning for a week or two. The other remedies may be taken a dose every three hours.

Rest the eyes, avoid a strong light; if there is much inflammation the eyes may be bandaged. Hot bread-and-water poultices will relieve pain and tension, and bring the stye to a head when its contents can be evacuated. Hot fomentations, constantly renewed, also give much comfort. Build up the system by nourishing, simple food, malt and cod liver oil, and observe all hygienic rules.

Inflammation of the Iris.—*Iritis.*

THE iris is the beautiful, colored, contractile membrane which is seen through the cornea or transparent portion of the external coat of the eyeball, in the front of the eye. In the center of this is a round opening, the pupil. The iris serves as a curtain to regulate the amount of light entering the eye, and aids the latter in accommodating itself to degrees of light by contracting and dilating the pupil.

Inflammation of the iris may be due to catching cold, to overuse of the eyes, injuries, foreign bodies, scrofula, rheumatism, gout, diabetes or other constitutional diseases. From 60 to 75 per cent. of all cases are said to be due to syphilis. Acute iritis lasts from two to six weeks; it may become chronic. There is marked redness, watering of the eyes, sensitiveness to light; some pain, which increases and becomes very severe, and of a neuralgic character, extending many times to the forehead and temples or even the whole head. In chronic cases there is little pain; the iris is discolored.

Aconite.—In the first stage, or, in a sudden reappearance, especially when due to a cold draught of air; great heat, burning, and dryness of the eyes; iritis from injuries.

Belladonna.—Early stages of iritis from a cold, or chronic inflammation following cataract extraction; much redness, and severe throbbing pain in the eye and head.

Mercurius Viv.—Especially in syphilitic cases; pains usually severe in the eyes, forehead and temples, worse at night and in damp weather; great sensitiveness to light; iris discolored; pupil contracted.

Rhus Tox.—Rheumatic iritis, especially if caused by exposure to wet; suppurative inflammation after an operation, with puffy swelling and spasmodic closure of the lids; on opening them tears gush out; pains worse at night.

Also *Arnica* in iritis from wounds. *Bryonia.* Inflammation, and watery discharge after exposure to cold in those subject to rheumatism; sharp, shooting pains in the eyes, through head or down into the face; may be soreness and aching of eyeballs, the eye sore to the touch. A dose of the indicated remedy every two hours in acute cases; three times a day, in chronic cases.

The patient should stay in a darkened room, and preferably in bed to secure rest from movement of the eye muscles, as well as freedom from irritation by light. Avoid the use of alcohol or stimulating foods. A tablespoonful of hamamelis to half a cupful of water, applied on cloths frequently renewed and as hot as can be borne will often greatly relieve pain and congestion. The eye may be washed out twice a day with warm boracic acid solution. The instillation of a one per cent. solution of atropine is very desirable, but should be done under a physician's direction as atropine is a poison. A few drops are dropped into the eye every two or three hours to twice or three times a day; dryness of the throat or flushing of the face are the first signs calling for its discontinuance. Small linen bags three inches square filled with fine table salt, and heated in an oven, make grateful applications; if cold is preferred, use cloths wrung out in ice water, but do not let them get warm. Do not use ice bags. Cold applications are indicated immediately after wounds to the eye.

Cataract.

The crystalline lens back of the iris, which focusses the rays of light on the retina, is covered by a highly elastic membrane called its capsule. Any opacity of the lens or its capsule, or both constitues cataract. This lessening of the transparency of the lens may be due to old age, other diseases of the eye, injuries, excessive heat and light, gout, diabetes, etc., defects of the eye at birth, and other causes. When the fibres that make up the lens have degenerated, no internal remedy will restore transparency, and operative measures offer the only relief, but in the very beginning the remedy indicated in the individual case should certainly be given, and its use persisted in.

Causticum.—Feeling of sand in the eyes, and pressure, heaviness of the lids; burning and itching of the eyes, with desire to keep them closed; aversion to light; winking and twitching of the lids; flickering or sparks before the eyes, and light obscured as from a thick fog or cloud.

Sepia.—Especially in threatened cataract in women, eyes feel weak, worse toward evening, and better in the middle of the day; blurring of light or sudden vanishing of sight; some sharp pains in the eyes, with heaviness and twitching of the lids; headaches which are worse morning and night.

Phosphorus.—Black, floating points before the eyes; distant objects seem to be covered by a smoke or mist; can see better in the half light or by shading the eyes with the hand; eyes give out while reading.

Iodoform.—Recommended by Dr. Norton, specialist in diseases of the eye at the New York Homœopathic College and Hospital, in cases where there are broad lines or patches of flaky substances in the eye, showing a rapidly progressing cataract.

Also *Conium* in cataract due to injury of the eye, and *Calcar phos.* in cataract in scrofulous and much debilitated persons, with much pain in the right eye and side of head. A dose of the indicated remedy two or three times a day.

Squinting.—*Strabismus.*

"Crosseyed" is a common term for this affection. Sometimes both eyes are affected, but usually only one; the strabismus may be intermittent or constant. It usually exists in connection with farsightedness; other predisposing causes are working in a poor light, excessive use of the eyes for near work, weakened eye muscles, disorders of the brain. Squinting is most frequent in children, and may sometimes be corrected by glasses, without resorting to operative interference. Remedies are of use in squinting due to disturbances of the nervous system.

Cicuta.—Spasmodic squinting in children, or squinting in children subject to convulsions. *Hyoscyamus* or *Belladonna* in squinting in sensitive, nervous children or those suffering from epilepsy. A dose twice a day.

Whatever refractive error of the eyes there may be should be corrected by glasses prescribed by a good oculist. As recovery may take place, with proper care of a child's eyes, it is better not to have an operation performed in very young children, and wait until the age of ten years or even later. Never let a child use the eyes in a poor light, or facing a strong light. When there is squinting, all near work should be avoided as much as possible.

Conjunctivitis.—*Inflammation of the Lining Membrane of the Eyelids.*

A LIST of remedies indicated in this disease, and an outline of the general treatment is appended to the brief descriptions of its different forms.

Catarrhal Conjunctivitis.

THE mucous membrane lining the eyelids, and which is reflected over the ball of the eye, is called the conjunctiva. It may become acutely inflamed from exposure to cold, wind, dust, or the disease may be due to an epidemic or to infection through a towel, handkerchief or even the fingers of a person already affected, for the discharge from the eyes is contagious. Catarrhal conjunctivitis may accompany other diseases. It is most common in the spring and fall, but may occur at all times of the year, and at all ages. Sometimes, but not always, there is inflammation of the lids, blepharitis, which has been already described. The white of the eye is highly inflamed, the lids itch and smart, eyes feel hot and heavy and as if sand was in them; and there is more or less bland, or partly mucous pus-like discharge. Acute attacks last from two to three weeks, but become chronic if neglected.

There is a form of acute catarrhal conjunctivitis known as Epidemic Conjunctivitis or Pink Eye. This is due to a small bacillus, and is generally communicated through the secretion from some affected eye.

Purulent Conjunctivitis.—*Gonorrheal Conjunctivitis.*

IN infants this form is called Ophthalmia Neonatorum. The cause, whether in infants or adults, is the contagion present in gonorrheal or syphilitic discharges. All the symptoms present in the ordinary catarrhal form are seen in this, only more prominent. Special symptoms are the elevation of the conjunctiva in a ridge surrounding the eyeball, little points above the surface of the conjunctiva which bleed, and a thin, semi-purulent discharge, becoming pus-like, thick and yellow; heat and burning of the eyes; puffiness of the lids.

Granular Conjunctivitis.—*Trachoma.*

Almost everyone has heard of trachoma since so many immigrants reaching these shores have been sent back by the medical inspectors because they had this disease. It is an infectious inflammation and thickening of the conjunctiva with formation of granulations on the inside of the eyelids, and finally a pus-like discharge highly contagious. When the disease is abating, narrow, white, linear scars form; but this affection is very obstinate, lasts months and even years, and relapses often occur.

Diphtheritic Conjunctivitis.—*Croupous Conjunctivitis.*

These are two more forms of the same disease, the former always due to infection by the specific germ of diphtheria, but this bacillus is also found in the croupous variety. In diphtheritic conjunctivitis the tissues are infiltrated, and may die; there is a purulent discharge, much prostration of the whole system as in diphtheria. It occurs in children, but is rather rare.

The croupous form differs in that the exudation is on the surface of the conjunctiva, and does not extend into the tissues beneath. It forms a fibrinous membrane which may be removed, leaving a bleeding surface. Chemical or mechanical irritants and excessive heat as well as germs, may cause this variety.

Scrofulous Conjunctivitis or Ophthalmia.

This form has several other names, of less importance than the causes and symptoms, for it is a common disease in scrofulous or consumptive children, especially under bad hygienic conditions, lack of cleanliness and proper food. These children often have eczema, enlarged glands, discharge from the ears, chronic nasal catarrh, etc.

On the conjunctiva will be noticed small, reddish elevations, surrounded by an area of redness; there is pain, watering of the eyes and aversion to light; matter forms and sometimes the elevations ulcerate; often the lids tend to stick together; relapses are common.

Aconite.—In the first stage of any inflammation of the conjunctiva when the eyes are red, burning and very painful, with great dryness or there may be some watering of the eyes; especially useful in inflammation from a foreign body, in acute catarrhal conjunctivitis or acute aggravation of the granular form. Cold local applications supplement this remedy well.

Arsenicum.—Acute catarrhal conjunctivitis, with ridge-like swelling; hot, scalding tears, burning pains worse at night; also in chronic cases when the discharges are thin and acrid, excoriating the eyelids and cheek

Argentum Nit.—Any form of purulent inflammation of the conjunctiva with very marked ridge-like swelling, profuse discharge of matter, and commencing haziness of the cornea, with tendency of the tissues to slough.

Aurum Met.—Scrofulous ophthalmia; the white of the eye bloodshot and ulcerated; much aversion to light; profuse, scalding tears, eyes sensitive to touch; a valuable remedy in trachoma.

Mercurius Sol.—Scrofulous ophthalmia, and in purulent conjunctivitis in adults or children when the discharges are thin and excoriating; profuse burning, excoriating, watery flow, or thin, acrid, partly purulent discharges; generally severe pains worse at night.

Pulsatilla.—Scrofulous, and purulent conjunctivitis; in scrofulous individuals, when little raised points on the conjunctiva only matterate; in catarrhal and purulent, when the discharge is blank and profuse; in trachoma, with very fine granulations. Thick, white or yellow, bland, and generally profuse discharges are especially characteristic of this remedy; pains better out of doors.

Calcarea Carb.—Inflammation due to exposure to wet; all symptoms worse during damp weather; catarrhal conjunctivitis in fat, unhealthy, scrofulous children.

Belladonna.—Early stages of inflammation, with great dryness of the eyes; extreme sensitiveness to light; throbbing pains.

Hepar Sulph.—Discharge of pus, with ulceration of the cornea; intense aversion to light; great redness of the eye; lids swollen, close spasmodically, sensitive to touch; yellowish white discharge.

Sepia.—Recurring attacks, especially in the spring of the year, or cases always worse in hot weather, also in women with uterine troubles.

Sulphur.—Catarrhal cases, especially chronic and in scrofulous children with skin eruptions; eyes worse from bathing, child will not have them touched; sharp, shooting, cutting pains.

Always remove the cause of the trouble so far as possible, stop overuse of the eyes, protect them from exposure to light, dust, etc.

Before using Homeopathic Medicines read pages 681 to 684.

Foreign bodies must be removed. In simple inflammation wear smoked glasses. Do not apply home-made poultices of any kind; they may make a simple case very serious. Compresses wet with ice water or with water as hot as can be borne often afford relief; *change frequently.* Cleanliness is always essential; as a wash, solution of boric acid, ten grains to the ounce of warm water, can always be used with safety.

Discharges from the eye must frequently be removed with little pieces of soft old linen or absorbent cotton, which must afterwards be burned.

In purulent ophthalmia in infants, when the discharge is profuse, wash the eyes with warm water, dry the lids gently and with a medicine or eye-dropper, instill one or two drops, not more, of a solution of nitrate of silver, ten grains to one ounce, once a day. The same treatment is equally good for adults infected by gonorrheal or syphilitic discharges. When but one eye is affected, the other may be protected by covering it with a watch crystal, held in place by strips of adhesive or surgeon's plaster. Remember the discharge is very contagious; the patient's towels, etc. must never be used by anyone, and the hands of the attendant should be thoroughly washed in 1 to 40 carbolic acid solution. For copious, pus-like discharges, frequent washing out of the eye with warm water containing as much boric acid as it will dissolve, is recommended, or use peroxide of hydrogen, or formalin, 1 to 2,000.

In diphtheritic or croupous conjunctivitis strong astringents must not be applied to the lids; the conjunctiva may be brushed over with lemon juice every six hours. Keep the eyes clean with boric acid solution. Hot applications are better in these cases than cold.

In all forms of inflammation where the lids tend to adhere, vaseline or cosmoline may be applied.

In trachoma the affected surface may be brushed over once a day with the following preparation: one ounce of glycerine to which six grains of carbolic acid have been added. Use a camel's hair brush. Cold compressed are beneficial.

In all eye affections the general health must be looked to; simple, nourishing, unstimulating food taken, good hygienic surroundings secured, and in cases of debility some standard preparation of iron, arsenic and quinine used, or cod liver oil.

Ulcers of the Cornea.

Ulcers may follow inflammation of the conjunctiva or be caused by foreign bodies, or in the aged by defective nutrition. There is great aversion to light; watering and redness of the eye, and on the cornea first a grayish-yellow spot which changes to a superficial or deep ulcer with sloughing margins; there is more or less pain, and the eyes are kept tightly shut.

Rhus. Tox.—Superficial ulcer, with extreme sensitiveness to the light and profuse flow of tears.

Conium.—Superficial ulceration with little or no redness of the conjunctiva, but intense sensitiveness to the light, and much watering of the eyes.

Mercurius Sol.—Superficial or deep ulcers, especially in syphilitic or scrofulous individuals with profuse, burning, excoriating flow of tears, much pain; lids thick, red and swollen by the thin, acrid discharge.

Hepar Sulph.—Deep, sloughing ulcers with severe, aching, throbbing, stinging pains, better from warmth, worse from cold and uncovering the eye; eye sensitive to light and touch.

Argentum Nit.—Ulcerations of the cornea in newborn infants, with profuse discharge from the eyes.

Silicea.—Sloughing ulcers, and small round ulcers, slow to heal.

Also *Calcarea carb.* Ulcerations in fat, flabby children with sweating of the head. *Sulphur*, acute and chronic cases, with pus, splinter-like, shooting pains in the eye toward morning; scrofulous individuals. A dose of the indicated remedy three times a day.

Small pieces of flannel dipped in very hot water, applied to the eye and changed about every two minutes, the applications continued from ten to thirty minutes at a time, three to eight times a day will give much relief; also bandaging, using some pressure.

With a medicine or eye-dropper apply atropine one grain to the ounce, twice a day; if the ulcer is central, or eserine, one-half grain to one ounce once a day, if the ulcer is near the margin and deep.

Build up the general health and stay in the house; keep the bowels open; protect the eyes by smoked glasses if a bandage is not used, but the latter is strongly recommended.

Rheumatic Pains in the Eyes.

During inflammatory rheumatism, the eyes may be exceedingly painful, and temporary blindness may accompany the disease.

Aconite.—When there is much soreness, pain, feeling of sand in the eyes, roughness and irritation.

Apis.—Rheumatic inflammation of the left eye; the white of the eye looks like raw meat, redness extending over the cheek.

Cimicifuga.—Soreness of the eyeballs on moving eyes; sensitiveness to light and touch; intense aching pain.

Spigelia.—Sharp, tearing pains with pressure in the eyeballs.

Before using Homeopathic Medicines read pages 681 to 684.

Belladonna.—The eye feels too large for the socket, and as if it would burst; much pain and sensitiveness to light.

Also *Bryonia*. Sense of pressure and heaviness in the eyes; intermittent pains much worse on moving the eyeballs, or opening the eyes. *Sulphur*. Dullness; spots before the eyes. *Rhus*. Redness, swelling and aching of the eyes; stiffness and soreness of the lids; dimness of vision. A dose of the indicated remedy three times a day. The remedies under "Rheumatism" should be consulted.

Specks on the Cornea.

LITTLE opaque spots on the cornea may be left after scrofulous inflammation has passed away. These may be removed by daily doses of *Sulphur* or *Euphrasia*.

Watery Eyes.

WHEN the eyes are watery, or prone to become so, from slight exposure to wind or cold, the difficulty may be obviated with daily doses of *Pulsatilla*, *Mercurius vivus* or *Lachesis*. Blood-shot eyes will be relieved by daily doses of *Euphrasia*.

Weakness of the Sight.—*Amblyopia*.

THE term amblyopia signifies a reduction of the normal power of sight which cannot be relieved by glasses, and which is not dependent upon any visible changes in the eye, although occasionally the term is used for poor sight when some changes can be discovered. Absolute blindness unaccompanied by changes in the eye, has another name, *amaurosis*.

To know the different causes of amblyopia, is to know to a certain extent what preventative or curative measures to take; for instance the excessive use of tobacco and alcohol; malaria; syphilis; some forms of kidney disease; hysteria; large doses of quinine; exposure to a strong electric light and to the glare of snow all may result in this disease. Blows on the head, loss of blood, and a stroke of lightning are occasional causes. Many other causes are mentioned in connection with the remedies.

Blindness to certain colors may exist from birth, or occur afterward from some disturbance of the nerve fibres of the eyes.

For SIMPLE WEAKNESS OF SIGHT in plethoric persons, give *Belladonna;* for scrofulous individuals, *Calcarea;* for weak or debilitated individuals, *China;* for nervous persons, *Hyoscyamus*. For those whose sight is impaired from biliary derangement, *Sepia* or *Sulphur*. For INCIPIENT AMAUROSIS, *Aurum*, *Sepia*, *Sulphur*. For COMPLETE AMAUROSIS, not incurable, give *Belladonna* to persons of full habit; *Calcarea* to persons who have a scrofulous tendency; *Mercurius*, for those suffering from hepatic derangement; *Phosphorus*, for those suffering from catarrhal affections; and for those subject to sick headache, *Sepia*. For TORPID WEAKNESS OF SIGHT, *Phosphoric acia.* For weakness of sight brought on by fine work, give *Belladonna* or *Ruta*. For that which occurs from old age, give *Baryta carb.*, *Opium* or *Secale cornutum*. Where weakness of vision occurs after suppression of the menses, or hemorrhoids, give *Pulsatilla* or *Lycopodium*. For that occasioned by suppression of measles, *Causticum*, *Stramonium* or *Sulphur*. For that supervening upon rheumatism, give *Belladonna*, *Pulsatilla* or *Rhus tox*. For that attendent on gout, give *Nux vom.* or *Colchicum*. For that caused by the abuse of mercury, give *Nitric acid*. For that caused by worms, give *Cina*. For that occasioned by diarrhœa, give *Merc. viv*. For that brought on by loss of blood, *China*. For that produced by scrofula, give *Arsenicum*, *Calcarea* or *Nitric acid*. When produced by cold in the eyes, *Dulcamara* or *Nux vomica*. That produced by blows or concussions requires *Arnica*, *Ruta*, *Euphrasia*. The remedies chosen must not be repeated oftener than once a day. When weakness of sight is attended with nervous headache, give *Aurum*, *Belladonna*, *Bryonia*, *Sepia* or *Sulphur*. If by congestion of blood to the head, give *Belladonna*, *China* and *Phosphorus*. For that attendant on deafness or noises, give *Cicuta*, *Nitric acid* or *Pulsatilla*. The remedies need not be repeated more frequently than once or twice in twenty-four hours. If weakness of vision is attended by gastric or abdominal ailments, give *Cocculus*, *Nux vom.*, *Ignatia* or *Pulsatilla*. If attended by derangements of the womb, give *Calcarea* or *Sepia*. If by pulmonary complaints, give *Phosphorus*, *Lycopodium*, *Calcarea* and *Sulphur*. If by disease of the heart, *Lachesis*, *Phosphorus*, *Pulsatilla*, *Sepia* and *Spigelia*. If by epilepsy, spasm or hysteria, *Hyoscyamus*, *Opium*, *Stramonium* or *Sulphur*. The remedy may be repeated, if necessary, every twenty-four hours.

The particular indications for several of the remedies may be stated as follows:

Aurum.—The upper half of the field of vision seems to be covered by a black body, the lower half is visible; everything is seen double, and one object mixed with another; sudden attacks after scarlet fever, or during confinement after delivery.

Belladonna.—Dimness of vision or actual blindness; objects have a double rim or outline, look red; a large halo sometimes red, sometimes broken into rays, appears around the flame of a candle; flashes of light or sparks before the eyes; pupils of the eyes dilate; eyes feel dry.

Arsenicum.—A valuable remedy in loss of vision dependent upon the use of tobacco, or upon wasting away of the optic nerve.

Calcarea Carb.—Farsightedness, but only one side of objects is visible; dimness of sight after getting the head cold; flickering, sparks and black spots before the eyes; light is painful.

Causticum.—Sensitiveness to light which causes constant winking, flickering before the eyes as from a swarm of insects, winking causes the appearance of sparks of fire before the eyes even on a bright day; dimness and indistinct vision; as if a veil or thick cloud was before the eyes; transient dimness of vision on blowing the nose.

China.—Dimness and weakness of sight in malaria, and with roaring in the ears after loss of blood, also blurring of objects, generally dilatation of the pupils, aching of the eyes on attempting to read or write.

Cicuta.—Objects appear double and black, and to alternately approach and recede, for this reason the inclination on standing is to hold on to something.

Cina.—On rising from bed all becomes black before the eyes, with dizziness and faintness, and unsteadiness on walking, relieved by lying down; yellow vision; on reading, the letters are blurred; eyesight better from pressure and rubbing the eyes.

Cimicifuga.—Aching pains of the eyeballs and black specks before the eyes, especially during menstruation.

Gelsemium.—Dimness of sight and vertigo; smoky appearance before the eyes, with pain above them; confusion of sight, objects appear double but by an effort appear single; blindness. A valuable remedy in paralysis of the nerves, and in disturbances of vision following apoplexy.

Hyoscyamus.—Vision obscured; objects seem indistinct; sensation as if a veil were before the eyes; deceptive vision, one of two equal sized flames seems smaller than the other or larger; things not present are imagined seen.

Lycopodium.—Especially valuable in "night blindness" or "moon blindness" caused by exposure to strong brilliant lights, a tropical sun or working before a furnace; evening light blinds the eyes; only half an object is seen; floating black spots before the eyes at a short distance.

Nux Vom.—The chief remedy for impairment of vision due chiefly to the use of alcohol or even to dissipation in general; beneficial after the excessive use of tobacco; vision cloudy, eyes cannot bear the daylight, and vision is obscured, especially in the morning.

Phosphorus.—Cloudiness or dimness of vision; everything seems in a mist; green halo around the light of a candle; vision better in the morning, in twilight, and when shading the eyes with the hands; black floating points before the eyes; eyes give out while reading.

Ruta.—Blurring of vision, watering of the eyes, letters seem to run together, these symptoms caused or made worse from reading or doing fine work; eyes weak, ache and burn, worse in the evening.

Sepia.—Fiery sparks and zigzags before the eyes, with great weakness; vision obscured as if by a veil, better on lying down, worse during menstruation, and mornings and evenings.

Silicea.—Blackness before the eyes after a headache; letters run together and look pale; black spots before the eyes.

Sulphur.—Heaviness and aching of the eyeballs when reading or writing, with dimness of vision as in a fog, seems better from slightly pressing or rubbing the eyes; both near and distant objects appear as if veiled.

Veratrum Vir.—Dimness of vision, faintness, and even blindness on walking; vertigo and pain from the light relieved by closing eyes, and lying down; unsteady vision; sympathetic eye troubles after great nervous strain.

A dose of the indicated remedy every night. By proper care much may be done to prevent or cure dimness of vision. Never work or read in the twilight or facing a strong light. Have any refractive errors corrected by glasses. Do not over-eat, or eat rich or stimulating foods, or use tobacco, stimulants or any drug to excess. Avoid all forms of dissipation, mental or physical.

Treatment should be begun at once for any disease such as gonorrhea, syphilis, diabetes, Bright's disease, etc. Consider hysteria a disgrace, and endeavor to control all the emotions, at the same time improving the general health by nourishing food, exercise out of doors, baths, massage and electricity. When exposed to a strong light or glare as when at sea, or when there is much snow, wear smoked glasses. Protect the eyes from high, cold winds and dust. Avoid late hours and overwork or excitement; don't worry.

Diseases of the Respiratory Organs.

Bleeding from the Nose.—*Epistaxis.*

Hamamelis 1 x.—Ten drops in one-third of a glass of water, and a teaspoonful taken every ten minutes will usually quickly relieve any ordinary attack of nose-bleed, even when bleeding has continued for some time, when due to a fall, blow or no apparent cause.

Ferrum Phos.—Frequently recurring hemorrhages from the nose, specially in excitable young or full-blooded persons, or in delicate children. A dose every ten or fifteen minutes.

Aconite.—Profuse and continued bleeding in full-blooded persons, or after getting over-heated, with full, rapid bounding pulse and feverishness; athletes after violent exercise. Give as above.

China 1 x.—Great exhaustion, paleness and faintness from loss of blood; nose-bleed in weak and debilitated subjects. A dose every half hour or more.

Arnica.—Nose-bleed resulting from direct injuries. A dose every ten or fifteen minutes.

Ferrum Mur 1 x.—Nose-bleed during fevers or malaria. A dose every half hour or more.

Erigeron.—Three-drop doses of the oil in severe nose-bleeds, especially if the blood is bright red, and the flow increased by every movement of the patient.

In a simple attack of bleeding from the nose, press upon the affected side, just below the bone, with the finger nail. A clot will frequently form and check bleeding, if this treatment is continued three or four minutes. Ice or ice water to the nose, forehead and back of the neck is serviceable. An injection of vinegar or pure lemon juice into the nose, or of peroxide of hydrogen will often relieve bad cases. Powdered tannin may be snuffed up, or a pledget of styptic cotton, iodoform or sterilized gauze inserted in the nostril affected.

A noted physician having a large and successful practice, recommends passing a long strip of bacon rind through the nostril, and allowing it to remain there some time.

Polypus in the Nose.

SMALL fleshy or mucous growths in the nose occasion difficulty in breathing, sometimes violent sneezing, and a watery discharge which may become purulent. Proper treatment should be at once instituted, as any interference with nasal respiration affects the health of the whole body, by lessening the amount of oxygen received by the blood through the lungs. Also mouth breathing is a prolific cause of disease of the respiratory passages.

Calcarea Carb.—Rapidly developing fleshy growths in the nose in persons of scrofulous constitution. A dose every four hours.

Teucrium.—Small, mucous growths in the nose in those having chronic catarrh; feeling as if the nose were stopped up; blowing and sneezing give no relief. Give as above.

Phosphorus.—Growths in the nose that bleed easily; frequent blowing of the nose, with resulting slight show of blood. Give as above.

Also *Sanguinaria can.* internally for mucous polypi that bleed profusely, and powdered sanguinaria nitr. applied directly to the growth daily by means of a powder blower. While constitutional treatment is always indicated, it is best to have the growth removed by a competent physician. This can be done by the use of cocaine and a wire snare or loop, making it a simple and practically painless operation.

Cold in the Head.—*Acute Rhinitis.*

SUDDEN changes of temperature, and the chilling of the overheated or sensitive body by draughts of air are the most frequent causes of this affection.

Other exciting causes are damp or wet feet or clothing, irritation and poisoning of the lining membrane of the nasal passages by dust, noxious fumes, chemicals, etc., great depression of the system, sleeping in draughts, and sometimes indigestion. Whether a simple cold is infectious, has not been absolutely determined. With the symptoms everyone is familiar; they are well emphasized under the indications of remedies.

Camphor.—After getting damp or wet, or being exposed for some time in damp, wet or foggy weather; in the very beginning with chilly, shivery sensations; back feels cold; sudden sneezing. A drop or two on sugar every ten or fifteen minutes for several doses.

Aconite.—After exposure to cold, dry winds; standing on cold pavements, or being out long in cold weather especially with snow on the ground; give at once if there is chilliness; feverishness but cannot get warm; thirst; sneezing; watering of the eyes and nose; throat rough; whole system feels depressed. A dose every half hour, increasing the interval.

Belladonna.—Follows *Aconite* well when symptoms become more marked, and with watery discharge from nose and sneezing; the throat is affected, feels raw and intensely sore, is a vivid red, and swallowing is painful; face flushed and headache in forehead and temples. A dose every hour.

Arsenicum Iod.—When the cold is well started and chiefly in the nose, though with some headache in forehead; constant desire to sneeze; frequent sneezing without relief; constant running of thin watery, acrid discharge making nose and upper lip sore; burning in the nasal passages and throat and some soreness. Give as above.

Mercurius Viv.—Copious discharge of thick, acrid mucus; bones of the nose feel sore; frequent sneezing and swallowing of the saliva; perspiration; catarrhal headache. A dose every hour or two.

Nux Vom.—Nose stopped up at night; feels stopped up in daytime; or sometimes free then suddenly obstructed; running of mucus in the daytime; severe headache; creeping chills are felt even if near the fire. Give as above.

Sanguinaria.—Much soreness of the palate, and the back of the mouth, worse on the right side; throat feels as if scalded; loss of taste and smell; constant acrid, watery discharge from the nose; nostrils sore; catarrhal headache; may be deafness and dizziness. Give as above.

Pulsatilla.—Thick, copious, disagreeable, greenish-yellow discharge, may be lumpy; loss of smell and taste; constant chilliness; all symptoms better out of doors; worse evenings. A dose every two hours.

Consult the medicinal treatment under "La Grippe," especially noting the indications for *Gelsemium.*

Take the indicated remedy regularly and faithfully. A cold needs to be followed up, and as it shifts its location, or as new symptoms arise, the remedy must be changed, but this does not mean a new remedy every five or six hours.

During an acute attack stay in the house, it possible, and preferably in bed. In the beginning, at bedtime, take a hot foot bath to which a little mustard may be added, and drink a glass of hot lemonade or gruel. If very feverish, the diet should be light, milk, gruels and broths. Ordinarily a generous, but unstimulating, nourishing diet is called for. If unable to remain in the house, unnecessary exposure, draughts, and overwork should be avoided, especially protect the feet from dampness, and breathe through the nose if possible.

The inhalation of the steam of two drachms of tincture of benzoin to a pint of water, heated to the boiling point, will soothe the membrane of the nose and throat. When the throat is involved consult the section on "Inflammation of the Throat," for the local treatment. Very hot fomentations applied over the forehead and eyes often give great relief to the pains in the head, especially when there is much swelling in the upper air passages. Seiler's tablets to be used as a nasal douche, and as recommended on page 239, are excellent.

Above all, preventive measures should be faithfully carried out, that the system may not be debilitated by frequent colds, and a fertile soil created for the development of other diseases such as diphtheria, la grippe, bronchitis and pneumonia. These measures include the cold or tepid sponge bath every morning, with friction; frequent bathing of the neck and chest with cold water, and subsequent brisk rubbing; avoidance of unnecessary wraps about the throat; outdoor exercise, breathing deeply *through the nose,* with forcible expiration; protection of the feet from dampness, and the abdomen from cold; immediate changing of wet clothes, and the avoidance of draughts and overheated rooms. Nourishing food, good ventilation, sufficient sleep, and a cheerful spirit are recommended.

Chronic Nasal Catarrh.—*Chronic Rhinitis.*

CHRONIC nasal catarrh most frequently follows the acute form, although injuries and irritants, syphilis, tuberculosis and extreme debility may be sufficient causes. One form of this chronic affection is characterized by swelling and increase of the tissues in the nose, the other by their shrinking and drying up. The latter often follows the former, with symptoms reversed, that is, breathing through the nose is unobstructed, there is little sneezing, the discharge at first is slight, then scabs form, but finally there is a very putrid discharge due to the decomposition of the secretions, or to ozena, which is an ulceration of the nasal cavities, with loss of smell.

When the tissues swell and become thickened, nasal breathing is difficult, and there is a most annoying discharge which may be thin or thick, scanty or copious, bland or excoriating; white, discolored, or bloody. When it dries in the nose it causes tickling, fullness or pain, with dull pains in the forehead and eyes. In its simplest form no appreciable shrinking or increase of the tissues may be noticeable.

Pulsatilla.—See the indications given under "Cold in the Head."

Ammonium Mur.—Clear, watery, corrosive mucus running from the nose; itching in the nose; stoppage of the nostrils, in children preventing them from sleeping, and causing nervous starting when falling asleep.

Argentum Nit.—Bloody and purulent nasal discharge; ulcers and erosions in the nose, covered with yellow crusts; itching; headache, with chilliness and sneezing.

Calcarea Carb.—Offensive smell in the nose like rotten eggs; nose dry and stuffy at night, free during the day; sore, ulcerated nostrils; chronic hoarseness; glands in the neck enlarge; (*carcarea iod.* is an excellent remedy when the last named symptom is present, and in those of a scrofulous constitution) tendency to grow fat; head sweats during sleep.

Aurum.—Especially valuable when there is decay of the nasal bones, very foul discharge; nose obstructed by crusts; nostrils ulcerated; burning, itching, and smarting in the nose; after the abuse of mercury in syphilitic subjects.

Hydrastis.—Thick, yellow, sticky discharge, dropping back into the throat, and causing hawking; catarrhal headache in forehead; constipation; constant tendency to "catch cold."

Hepar Sulph.—Swelling and boil-like painfulness of the nose; sensitiveness to every draught; pus-like discharge sometimes bloody; catarrh of one nostril; tonsils and glands in the neck swollen and hard.

Mercurius Sol.—Syphilitic ulceration of the bones of the nose, with profuse watery, or greenish pus-like discharge. *Mercurius iod.*

Tough, white or yellowish mucus especially in the back of the nose; cases of long standing; also profuse, acrid, long-lasting discharges which excoriate the nostrils and upper lip; shooting pains at the root of the nose.

Also *kali bich.* for tenacious, stringy, yellow mucous discharge, with pressive pain and obstruction of and ulceration in the nose. *Silicea.* Nasal passages dry, painful, excoriated, covered with crusts; nasal bones affected; discharge acrid and corroding. *Graphites.* Dry scabs in the nose; sore, cracked, and ulcerated nostrils; tough, lumpy, bloody, or yellow; foul discharge; fleshy persons and those with eczema. *Sulphur.* Chronic, obstinate cases, especially in thin people with coarse skin and hair. *Alumina.* Chronic catarrh in old people, with hard scabs, and greenish-yellow discharge. A dose of the indicated remedy three times a day.

An excellent cleansing solution for douching, or syringing out the nasal passages is made by adding ten grains each of salt and bicarbonate of soda to four ounces of warm water. Glycothymoline one part, to three or four parts of warm water is a mild and soothing antiseptic. Two Seiler's tablets dissolved in from four to six ounces of warm water can be fully recommended. Any one of these cleansing solutions may be used two or three times a day. Pledgets of absorbent cotton wet with peroxide of hydrogen and placed in the nose will soften even very hard crusts; any bland oil like liquid vaseline, cosmoline or albolene may be applied with an oil spray; pine-needle oil and eucalyptus are also used. When there is much chronic swelling of the nasal tissues, surgical interference may be necessary.

Hay Fever.—Hay Asthma.—Rose Cold.

The pollen of plants excites attacks of this disease, which occurs more often in the male, and in persons of an excessively nervous organization. The symptoms are well described on earlier pages of this book, and are chiefly those of acute influenza, with those of bronchitis or asthma in addition. May, June, the latter part of August and September are the critical periods for sufferers from this complaint, which occurs annually, and lasts from four to six weeks.

Arsenicum Iod. 2 x.—Constant inclination to sneeze, and sneezing which gives no relief; acrid discharge from the nose making it very sore, as also the upper lip; glands of the back of the mouth enlarged and sore; great prostration; burning and itching of the nose; symptoms worse after midnight; hay fever, especially in delicate or debilitated individuals.

Inpecac. 2 x.—May be given in alternation with arsenicum, when in addition to the above symptoms there is wheezing, difficult breathing with great feeling of anxiety, and pressure in the chest; constriction and cough.

Euphrasia.—Irritation and sneezing all day, with copious, unirritating discharge from the nose, but profuse, excoriating watering of the eyes, with swelling, burning, itching and redness of the lids, causing constant desire to rub them.

Sabadilla.—Spasmodic and severe paroxysmal sneezing in the morning with excessive or slight catarrhal discharge; one or the other nostril stuffed up; watering of the eyes following sneezing; oppressed breathing, and cough at night.

Terpine Hydrate.—The author cannot vouch for the efficiency of this remedy, but it is highly recommended by good authorities in fifteen grain doses, in capsules, three or four times a day in the twenty-four hours.

Also *Naphthalin*, especially where, with the influenza there is full feeling in the forehead, puffiness of the face, and much asthma. This remedy may also be given as a preventative, or *Cepa* which has immoderate sneezing; profuse bland or excoriating discharge from the nose, with itching and obstruction of the nose; headache; loss of appetite; broken sleep; slight hoarseness; tickling in the throat and cough; especially if the attack is made worse by dust or the smell of onions. *Gelsemium.* For great prostration, and intense headache in the forehead or back of the neck, with dryness of the nasal passages. A dose of the indicated remedy every three hours.

About two weeks before the attack is expected wash the passages of the nose and where they lead into the throat with glyco-thymoline or hydrozone, one to ten, using cold boiled water to dilute the remedy, and after ten days increasing the strength to one to four. Use a syringe or nasal douche. Seiler's Tablets, two to four ounces of water may be used. During an attack a ten per cent. solution of naphthalin or a two per cent. solution of menthol may be dropped or sprayed into the nasal cavities.

Change of climate is the first thing to be thought of, from the country to the shore or to the Adirondacks or White Mountains, or take a sea voyage. Live hygienically, abstemiously, and with regularity; avoid excitement, and use no stimulants.

La Grippe.—Grip.—*Epidemic Influenza.*

The grip is not a disease needing much introduction to the readers of this book, as probably nearly every one has suffered from it. The first American epidemic occurred in 1655, but within the past ten years outbreaks, especially in large cities, have been numerous and serious. This is a contagious specific disease, the organism causing it having been identified by Pfeiffer of Berlin in 1892. Its name is very appropriate, being taken from the French verb *gripper*, to seize, which it certainly does both suddenly and violently. The contagion is probably transmitted by means of the moist accretions of the mucous, (lining) membrane of the respiratory tract, and the period of incubation is only two or three days. Although epidemic influenza manifests itself in several forms, there are two principal ones, the catarrhal and the nervous, according as the symptoms of the one or the other are most prominent; but, as a basis for selecting the remedy indicated, names are of far less importance than the careful observation of all the symptoms.

Lowered vitality; damp, cold, murky weather; filth in the streets, and dirt and dust in the air; overwork, bad ventilation in houses, shops, theatres, street cars, etc., all predispose one to the disease, also breathing through the mouth which causes congestion of the sensitive mucous membrane, and allows irritating substances to pass to the lower respiratory tract that the hairs in the nose would otherwise strain from the air, at the same time the air is being warmed.

The onset of grip is usually abrupt. A majority of the following symptoms are generally present. There is general chilliness or a severe chill, followed by the speedy development of coryza; feverishness, followed by quickly rising temperature; aching all over as if beaten; severe bursting, tearing headache; profound prostration which continues throughout the attack; much depression of spirits, restlessness, and sleeplessness. There may be disturbance of the stomach and intestines, with nausea, abdominal tenderness, and diarrhœa. The most agonizing pain may be in the eyeballs and at the root of the nose, but may be most severe in the back of the head and nape of the neck. Delirium may occur in the pronounced nervous form of the disease. Convalescence is slow. When death results, it is generally from some complication such as bronchitis, broncho-pneumonia, cerebro-spinal meningitis. Grip often leaves the sufferer with such after-effects as insomnia, neuralgia, pleurisy, abscess of the lung, kidney or heart disease.

Gelsemium, 1 x.—Early, often and almost invariably in the beginning. Chilliness, yet feverishness; heat of the head and face; dull headache, especially of the back of the head; great prostration; full feeling at the root of the nose; eyes heavy and reddened, drowsiness, languor; full, frequent pulse; little thirst; bruised pains in the back, and all over; dizziness. Ten drops of the tincture, *i. e.*, 1 x new style, Φ old style, to one-half a glass of water, a teaspoonful every hour

Aconite.—May be called for in the earliest stage when there is great restlessness; high fever; hot, dry skin, dry, violent racking cough. A dose every hour.

Arsenicum Iod.—Marked catarrhal symptoms, affecting the eyes, nose, and throat; acrid, copious, irritating discharges; great prostration; restlessness and thirst; desire for artificial warmth. Later great difficulty in breathing, with coldness, and cold sweating; fatiguing, shaking cough, with expectoration of tough, sticky sputum; especially in feeble, old people without pronounced involvement of the lungs or bronchial tubes, but with great general prostration. Give as above.

Eupatorium Perf.—Soreness and pains as if in the bones; aching pain in the back as from a bruise; sneezing; soreness of the eyeballs; eyes water. Give as above.

Bryonia.—Bronchial catarrh; pleurisy, or pneumonia; fever, languor and pains all over. Give as above.

Rhus Tox.—Rheumatic pains without much fever, but with great restlessness. Give as above.

Cuprum Ars.—When there is pain and soreness in the region of the stomach; catarrhal diarrhœa; nausea and sometimes vomiting. Give as above.

Also during convalescence, three times a day, *Ferrum phos.* or *Arsenicum iod.* when there is great debility, and the strength returns slowly. Cod liver oil and malt is recommended in these cases. *Zincum phos.* when the nervous symptoms have been very marked, and there is neuralgia; sensitiveness of the spine; a headache that persists, and disinclination to use the head. *Strychnia phos.* Great debility; no appetite; unrefreshing sleep, with headache early in the day.

In mild cases of grip as well as in severe, the patient should go to bed. Grip is not a disease to be trifled with, and it is true economy to give up to it. Liquid diet should be given while there is fever, diarrhœa or any difficulty in digesting the food. Dry heat in the form of hot water bags, will often relieve pain in the back and elsewhere. Cold compresses to the head and eyes may be acceptable in the nervous form of the diseases.

Preventative measures include cold sponge baths with friction; good ventilation; the avoidance of draughts, overwork, or the free use of stimulants. A liberal nourishing diet is advisable.

Sore Throat.—*Acute Laryngitis.*

THE common sore throat is called laryngitis, and the acute form may become chronic. Draughts, getting wet or damp, over-exerting the voice, badly ventilated rooms, dust and noxious vapors, keeping on wet clothes are common causes of this affection which also may accompany influenza, measles, scarlet fever and other fever, and be excited by disturbances of the stomach and intestines. There may be a superficial inflammation causing chiefly hoarseness or even loss of voice, burning and tickling in the throat; slight cough; rawness, redness and more or less swelling; but the catarrhal form, which in children we call croup, may be very severe.

Aconite.—In the beginning, fever; full, rapid pulse; hot, dry skin; throat feels rough and dry; sometimes dry cough; much restlessness and anxiety. When the two last mentioned symptoms are wanting, Ferrum phos. may be even better. A dose every hour.

Belladonna.—Violent attack; high fever; dryness, redness and rawness of the throat especially in the right side; red face; throbbing of the arteries in the neck; inflammation and swelling of the tonsils; loss of voice; sleeplessness. Give as above.

Mercurius Bin.—Constant secretion of mucus in the throat; frequent difficult, painful and empty swallowings; some swellings of the glands under and back of the jaws; perspiration, especially at night. A dose every two or three hours.

Phosphorus.—Continued and great rawness, with dry cough and loss of voice. Give as above.

Apis.—Dryness of the mouth, and throat; puffy swelling of the mucous membrane; stinging, sticking pains; swallowing painful and almost impossible. This condition is really edema, or swelling of the larynx, and apis is the first remedy to be thought of. A dose every hour.

Phytolacca.—Dark red, dry, swollen mucous membrane; sometimes pustular spots; pain on swallowing; swelling and tenderness of the glands externally at the angle of the jaws; aching in the back and limbs. A dose every one to three hours.

Hydrastis.—Rawness and soreness of the throat; constant hawking of mucus, which drops into the throat from the back of the nose. Give as above.

A cold pack to the larynx, or the application of antiphlogistine often relieves the inflammation quickly. For direct treatment of the inflamed surface, use an oil spray of liquid vaseline one ounce, oil of sandal wood six drops, and oil of tar three drops, or a gargle of twenty drops of phytolacca tincture, or a teaspoonful of common salt, or half an ounce of listerine to a cupful of water as near the boiling point as can be borne. Bathe the throat often with cold water, and rub briskly with a coarse towel. Rest during the attack. Inhalations of steam medicated with iodine, bromine or eucalyptol are useful.

Chronic Sore Throat.—*Chronic Laryngitis.*

The usual form of this affection is the catarrhal, following acute attacks or from long-continued use of the voice, inhaling dust, excessive smoking, mouth-breathing, or in connection with some other disease of the air passages such as nasal catarrh. There is hoarseness, especially on beginning to use the voice; a feeling of stiffness of the throat; tickling, itching and an uneasy consciousness of the need of constant hemming and hawking; hoarseness may extend even to loss of voice. The removal of the cause is of the greatest importance. Singers, preachers and teachers are particularly liable to chronic laryngitis.

Causticum.—Hoarseness and loss of voice, always worse mornings; rawness and burning under the breast bone; paralysis of the vocal cords. This acts as a tonic to the muscles when used a few hours before singing or speaking.

Carbo Veg.—Long lasting hoarseness, worse every evening and from talking, with raw feeling in the throat; dry, tickling cough. A dose three times a day.

Phosphorus.—Hoarseness and loss of voice, worse in the evening; throat sensitive to touch, and so sore it causes pain to talk or cough; voice tires easily; rawness in larynx; tickling; hawking; dry, hacking cough. Give as above.

Argentum Met.—A valuable remedy in chronic laryngitis and hoarseness, especially in public singers or speakers; cough from laughing or talking, with easy expectoration of white, thick mucus like boiled starch. Give as above.

Hepar Sulph.—Persons of consumptive tendencies, very sensitive to cold air, who perspire easily and profusely; scanty, tenacious, muco-purulent expectoration. Give as above.

Kali Bich.—Hoarseness and accumulation of much tenacious mucus in the larynx in the morning; tickling in the larynx caused by coughing and clearing the throat; tickling extending into the mouth and ears. Give as above.

Manganum.—Obstinate chronic hoarseness, and roughness of the throat, especially in the morning, in the open air, and in debilitated or consumptive persons; better from smoking and after raising lumps of mucus, though after long hawking. Give as above.

Heated, badly ventilated rooms, crowds, smoking, the use of alcohol, spices, rich food must all be avoided. The voice must be rested. Change of air, especially to that of pine forests, and to a warm, dry equable climate is most desirable. Do not muffle up the throat; bathe it often with cold water, using friction. Cleansing the nasal passages and throat with borolyptol, listerine, glycothymoline, diluted with three or four parts of warm water is advised, or use ten grains of bicarbonate or biborate of soda to one ounce water.

Tonsilitis and Quinsy.

SIMPLE acute tonsilitis is a mild superficial inflammation due to cold or wet, or occurring during scarlatina, measles or some similar disease, and characterized by swelling and redness of the tonsils to which tenacious mucus adheres, some pain and stiffness of the jaws on swallowing. In a few days, as a rule, recovery takes place. In quinsy, or tonsilar abscess, however, the deeper tissues are involved, and there is suppuration. There are chills; high fever; headache; backache; rapid, painful inflammation of the tonsils; swelling of the glands of the neck; pain and difficulty in swallowing, and finally the formation of an abscess which bursts, or may be lanced to evacuate the pus. Those most subject to quinsy have a rheumatic history. This disease may last from a few days to two weeks.

Belladonna.—The leading remedy, throat bright red, raw, and dry; swelling of the throat generally worse on the right side, painful to touch; flushed face; fever; headache in the forehead; throbbing of the arteries in the neck.

Mercurius Bin.—After belladonna when the tonsils are a dark red, hard and swollen; worse on the left side; the back of the mouth raw and burning; grayish white patches on the tonsils, painful swelling of the glands under the lower jaw. A dose every two hours.

Hepar Sulph.—Tonsils and glands of the neck much swollen; parts very sensitive to touch; sticking, splinter-like pains or throbbing. Give as above.

Baryta Carb.—Comparatively mild cases, and in those very sensitive to cold air; frequently recurring tonsilitis, with tendency to suppurate. A dose three times a day.

Kali Bich.—Copious secretion and discharge of ropy, tenacious, stringy mucus, with swelling of the tonsils, which are dark red; sharp, shooting pains. A dose every two hours.

Also *Phytolacca* when tonsils are swollen and bluish; throat dry, swallowing difficult, and with every attempt there are excruciating pains through both ears. *Silicea* when, after abscesses form and open, they refuse to heal, and there continues to be some discharge.

The sufferer should stay in a warm room, if not in bed; gargle the throat with a mild antiseptic, see section on "Sore Throat." As soon as an abscess forms, and by its soft, fluctuating feel it seems ready to be opened, it should be lanced, as this will save the patient much pain. The general health must be improved. Cod liver oil is recommended, and the malt extracts.

Diphtheria.

Diphtheria is an acute, infectious, contagious, inoculable disease affecting chiefly the mucous membranes of the pharynx at the back of the mouth, and the upper air passages, and characterized by the formation of a fibrinous, grayish-white membrane, in the meshes of which are found the "Klebs-Löffler bacilli," or diphtheria germs. In pseudo-diphtheria," or false diphtheria there is a membrane resembling that of true diphtheria, but it does not contain these germs, nor is the whole system so profoundly affected. False diphtheria is common in scarlet fever, and like the true, may also occur in erysipelas and measles. Membranous croup has been mistaken for diphtheria. No age is exempt, although children from one to seven years old are the most frequent sufferers.

Diphtheria may occur at any time of year, but cold damp weather favors epidemics, and its development is encouraged by bad drainage, open cesspools, defective plumbing, sewer gas, damp cellars, previous catarrhal affections of the nose and throat, and all unhygienic surroundings and manner of living. The diphtheria germ possesses great vitality, and will remain active on furniture, walls, clothing, books, toys and animals for many months, and even years. Direct contagion usually takes place from the patient's coughing, or from an attendant's breathing the air from the patient's mouth.

The period of incubation or hatching of the disease after exposure to it is from two to ten days, and may be longer, but not as a rule. As diphtheria poisons the blood, there are many constitutional as well as local symptoms; all will be mentioned in the order in which they generally appear: Languor; chilliness; moderate fever, and there may be some pain in the head, back and limbs, with loss of appetite; soreness, followed by inflammation and swelling of the throat; the formation of an exudate upon the tonsils as yellowish or grayish spots which run together, form patches, and may extend to the roof of the mouth, soft palate, upper part of the throat, and even involve the nose, and the lower air passages to the bronchial tubes and lungs. Unlike the secretion sometimes seen in tonsilitis, the exudation in diphtheria is firmly adherent to the lining beneath, and when the membrane is torn or thrown off it leaves a raw, bleeding surface, and tends to reform. With the appearance of the membrane the breath becomes very foul, and has a peculiar, sickish odor. Swallowing becomes painful and difficult, and fluids may return through the nose; the glands under the jaws swell; breathing is interfered with, there is great prostration; rapid, feeble pulse; high fever; vomiting; frequently a rash about the face, neck and chest, soon disappearing.

When the nose is affected, there is a yellowish, offensive, acrid discharge, obstruction of breathing, glandular swelling, and frequently nosebleed.

When the above symptoms are severe, the patient's strength may fail, and blueness of the skin show how much breathing is interfered with; the pulse grows weak; delirium or stupor may develop, and death follow in a short time.

Many cases, however, recover, and in these improvement generally sets in by the end of a week, characterized by the gradual softening and peeling of the membrane. Diphtheria may be complicated by bronchitis, broncho-pneumonia, kidney disease or bleeding from the nose or throat. Paralysis, especially of the throat, is common during convalescence, and may occur during the disease; heart paralysis is the most dangerous form.

A dose of one of the following remedies may be given every hour:

Belladonna.—Mild cases only, before exudation takes place, and when there is high fever; dryness of the mouth; the tonsils or throat bright red; much pain on swallowing, especially liquids; congestion of the face, and headache.

Phytolacca.—Mild or moderately severe cases when the throat and back of mouth are covered with a dirty, dark, false membrane like wash leather; mucus is hawked up with difficulty and is stringy; great prostration, and severe pains in head, neck, back and limbs.

Nitric Acid.—Yellowish or grayish-white patches on the tonsils and nearby parts, extending to the mouth, lips, and nose; swallowing very difficult as if throat were constricted; splinter-like pains; glands under lower jaw swollen and painful; especially useful when the nose is involved, and there is a very bad smelling, excoriating discharge.

Mercurius Bin.—In cases not so bad but what they may be mistaken for a form of tonsilitis; tongue thickly coated a dirty yellow; glands in the neck swollen; tonsils and opening into the back of the nose covered with a somewhat soft and pasty membranous deposit; much mucus in throat, causing hawking.

Kali Bich.—When the deposit located as above and extending down the throat and up into the nose is thick, tenacious, and yellow, with tough, stringy mucous discharges; shooting pains from throat to ear on swallowing; red, raw, shining tongue, change from *Mercurius bin.* to *Kali bich.*

Mercurius Cyan.—Early and great prostration; involvement of the larynx and swelling of the glands; extensive white, yellow or gray exudate in mouth, throat and nose, very foul; very rapid, weak, intermittent pulse.

Baptisia.—*Stupefaction and drowsiness*; mind wandering, or low, muttering delirium; restlessness; face dusky red; throat dark red; tonsils and glands swollen; absence of pain.

Apis.—Great prostration from the beginning; throat looks puffy, glossy, red or purple; no thirst; burning, stinging pains; exudation dirty gray; urine scanty.

Arsenicum.—The infection of the whole system is very pronounced; the breath is putrid; prostration and restlessness great; feeble, quick pulse, dark membrane; throat badly swollen; thin, excoriating discharge from the nose; may be offensive diarrhœa.

Bromine.—Diphtheria of the larynx, with much constriction, and paroxysms of suffocation; hoarse, croupy cough, rattling in the larynx.

Cantharis.—Mucous membrane of the throat dark red and as if blistered; severe burning pains, with rawness; blood in the expectoration; cannot swallow, throat is so raw; urine scanty, may be bloody or contain albumen; passing it causes burning and smarting.

Gelsemium.—Paralysis of the throat, tongue or larynx; sometimes of the heart or muscles of the eyes, following diphtheria. A dose every three hours.

Also *Lachesis* in malignant diphtheria in bad cases where the whole system is poisoned; the throat a purplish livid color; pulse feeble and heart failure threatened; extreme prostration, patient drowsy; extremities cool. A dose every half hour. If no other remedies are available, five to fifteen drops of a chlorinated solution of lime may be added to one-half a glass of water, and a teaspoonful given every half hour to three or four hours, according to the urgency of the symptoms.

Every remedial measure should be immediately supplemented, if not preceded, by the administration of diphtheria antitoxin. If in doubt whether the disease is diphtheria or tonsilitis, give an injection of 500 units for a child, 1,000 units for an adult. The average dose (Behring's Standard) in mild cases is 1,500 units, but in severe cases may be from 2,000 to 3,000 or more units. The dose varies with the duration and severity of the disease. Full instructions, which should be carefully followed out, come with all preparations, also as to the use of the syringe. After exposure to diphtheria a dose of 1,000 units should be given an adult, 300 units a child, and the protection thus acquired will last three or four weeks.

The throat may be swabbed with a fifteen volume solution of peroxide of hydrogen to dissolve the membrane and may be disinfected by use of potassium bichlorate, one grain to one ounce of water, used in a hand or steam-atomizer every two hours. When the nose is chiefly affected, use permanganate of potassium in the same proportion.

Alcohol as a gargle, 1 to 4 or even 1 to 2 is excellent. Steam may be obtained from a teakettle, if one has no steam atomizer, by using a rubber tube to convey it to the patient.

The patient should be isolated in an upper room, well ventilated, and from which all draperies, rugs, etc. have been removed. Sterilize all bedding and clothes by boiling; burn all rags and cloths used by the patient for the secretions; and have the patient expectorate into such cloths or into a cup containing carbolic acid solution, 1 to 20. No food should be allowed to remain in the room. The attendants should use an alcohol gargle, wash their hands in a carbolic solution

1 to 40, and wear no clothes which cannot be sterilized by boiling or baking.

The nourishment of the patient is of great importance. Milk and egg; peptonized milk; koumiss; eggs raw; egg nogg; egg and coffee; mutton or chicken broth, oyster broth; beef peptonoids; wine whey and trophonine are recommended. Nutritive enemata may become necessary, especially if there is paralysis of the throat. Give no solid food at any stage even of convalescence in the latter case. If the heart's action is very weak give stimulant, about half an ounce of wine for a dose. When the heart seems to be giving out entirely, give *Strychnine*, one-fiftieth of a grain every two or three hours, reducing the dose to one-hundredth of a grain as soon as the pulse grows stronger.

Whooping Cough.—*Pertussis.*

WHOOPING COUGH is a specific, contagious disease characterized by paroxysms of coughing, attended at their close by a long-drawn inspiration, the "whoop," which gives it its name. It is most common in children, but may attack adults and prove quite serious. The period of incubation is from seven to fourteen days, and the disease frequently appears as an epidemic in the winter and early spring.

Commencing as an ordinary cold or coryza with cough, running from the nose, redness and puffiness of the lower eyelids, and watering of the eyes, it progresses for ten days or more until the cough suddenly assumes a violent, spasmodic, paroxysmal form, with the characteristic whoop. The paroxysms of coughing may number anywhere from three or four to fifty or sixty in the twenty-four hours. During one of them the sufferer cannot get his breath, and suffocation seems imminent; the face is suffused, the eyes infected and bulging, and the tongue protrudes; sometimes there is nose-bleed or vomiting. The paroxysmal stage may last from two to six weeks, and the duration of the disease, as a whole, varies from six to twelve weeks. Between the attacks of coughing the patient seems well.

The contagious principle of this disease is probably in the expectoration, and possibly in the air from the lungs.

The most frequent complications are vomiting; bronchitis; broncho-pneumonia, and collapse of the lungs; pleurisy. There may be bleeding from the nose and convulsions.

Aconite.—First stage, with fever, hard, dry, wheezing cough; burning pains and tickling in the throat. A dose every two hours.

Belladonna.—In the beginning, sudden, violent paroxysms of coughing, without expectoration, *worse at night*; with sore throat, flushed face, eyes bloodshot, and sometimes nosebleed. Give as above.

Ipecac.—Violent, suffocating cough, the child becoming stiff, and *blue* in the face; gagging and vomiting of mucus. Give as above.

Drosera.—Spasmodic paroxysms of hoarse, loud cough, threatening suffocation; constriction of the chest; often vomiting of food or mucus. Give as above.

Cuprum.—Violent paroxysms of coughing, causing convulsions, stiffening of the body, and loss of breath, followed by vomiting and prostration. Give as above.

Corallium rubrum.—Short, quick, ringing cough; the paroxysms occurring in rapid succession, with extreme violence, making the face purple, and followed by vomiting of mucus and great prostration. Give as above.

Naphthalin, 1 x.—Long and continued paroxysms of coughing, with inability to inspire air, so the child is almost suffocated. Give as above.

Hyoscyamus.—Dry, spasmodic cough at night, aggravated by lying down, better from sitting up; face dark red, swollen and distorted; constriction of the throat; much mucus in the throat, and further down.

Tartar Emet.—Severe cases where the lungs are involved and there is much rattling of mucus in the chest; rapid pulse, nausea, vomiting, and drowsiness, mucus raised with difficulty, but expectoration gives relief, as does also vomiting.

Isolate the sufferer from others as much as possible; let him expectorate on pieces of old cotton cloth which should be burned; the same may be used in place of handkerchiefs, and then burned. Ventilation should be perfect; light weight woolen clothing worn next the skin; the diet should be ample but digestible and nourishing; exposure to cold and damp air must be avoided; nutritive rectal injections may be given if vomiting is excessive. Remedies which can be inhaled are mentioned on page 502. Mild cases should spend as much time as possible in the open air in fine weather. Change of climate is frequently beneficial.

Acute Bronchitis.

An acute attack of inflammation of the bronchial tubes is generally the extension downward of an ordinary cold, which is followed by tightness and oppression in the chest; more or less fever; a raw, scraped feeling under the breast bone; a dry, hoarse, hard cough, followed later by expectoration of frothy, then thick, stringy mucus, which may be blood-streaked, but does not look like rusty nails as in pneumonia. After secretion has formed, the cough is not so hard, but there are crackling or rattling sounds in the tubes from the mucus there. A simple attack lasts a week or ten days, but bronchitis may become chronic, or be severe in old people or delicate young children.

Before using Homeopathic Medicines read pages 681 to 684.

Aconite.—Early in the attack; chilliness; high fever; hot, dry skin; short, hard tickling cough; great restlessness.

Ferrum Phos.—The same symptoms, but without restlessness or much fever.

Bryonia.—Heat, soreness, and pain behind the breast bone; dry, rough cough; labored breathing, and stitches in the chest; cough hurts the head and is worse in a warm room, and from moving about.

Phosphorus.—Should not be given before bryonia as it is seldom indicated until later, when there is tickling under the notch in the breast bone, and a very tight, constricted feeling in chest; cough better indoors, and worse on going from warm into the cold air.

Kali Bich.—Especially serviceable after *Aconite* in bronchitis following influenza, when there is free expectoration of thick, yellow, it may be ropy secretion, with hard, deep cough, and heavily coated tongue; loathing of food.

Ipecac.—Asthmatic breathing, much nausea and vomiting of mucus; rattling of mucus in the bronchial tubes; face livid while coughing; wheezing respiration.

Tartar Emet.—Profuse secretion of mucus in the bronchial tubes, great rattling of mucus with the cough, but *nothing is raised*; great oppression and suffocative breathing; nausea, vomiting, drowsiness; face bloated or livid. Both this remedy and *Ipecac* are valuable in treating bronchitis in children, and in the aged.

Belladonna.—Particularly useful for young children, spasmodic violent dry cough, with tickling in the throat; high fever.

A dose of the indicated remedy should be given every one or two hours. Keep the patient in a well ventilated room, temperature 70° to 75° F. The air should be kept moist by a steam atomizer, boiling water in a teakettle or other contrivance. Apply antiphlogistine to the throat and upper part of the chest, and cover with gauze and absorbent cotton, holding all in place by a bandage. Keep the bowels open by injections of warm water or glycerine. Give milk, gruels, barley water, wine whey, broths, egg nogg, and after fever subsides and convalescence has begun, a light diet including custards, wine jelly, ice cream, blanc mange, soft-boiled eggs, minced chicken, sweetbreads, steak, etc.

Persons showing a susceptibility to bronchitis should not keep their living rooms too warm; should have plenty of fresh air; bathe the throat and chest with cold salt water, with friction; and not muffle up the throat; breathe through the nose, and wear light weight woolen or linen mesh underclothes.

Chronic Bronchitis.

CHRONIC bronchitis may follow an acute attack and occurs more often in gouty, rheumatic, or elderly or middle-aged persons. It may follow other diseases. Cough and expectoration are the principal symptoms, although the latter is sometimes scanty. There may be a fetid expectoration, partly mucous, partly purulent, and this form of bronchitis is called bronchorrhea. Attacks of chronic bronchitis may recur every winter. There may or may not be any pain, but there is a sense of oppression, and shortness of breath. Asthma and heart disease may complicate chronic bronchitis.

Tartar Emet.—Especially for old people, with suffocative cough, and profuse secretion of mucus difficult to raise.

Stannum Iod.—Copious, easy expectoration of thick greenish or grayish semi-purulent mucus, which may be lumpy, tasting salty or sweetish; may be oppression in the chest and short breath.

Kali Bich.—Stringy expectoration; asthmatic breathing, worse about three or four o'clock in the morning; wheezy cough forcing the sufferer to sit up; hoarseness and burning pain low down in the throat; general weakness; eyelids puffy

Sulphur.—Refractory chronic bronchitis in rheumatic, gouty, or scrofulous individuals, with oppressed breathing and putrid expectoration.

Phosphorus.—Dry, hacking cough with pain or tightness in the chest; tickling in the larynx; thin, delicate persons of a consumptive tendency.

Also *Hepar sulph.* Loose cough; expectoration partly mucous, partly purulent; worse at night and in the early morning hours. *Silicea.* Purulent expectoration with fever and profuse night sweats in consumptive persons. *Arsenicum.* Bronchitis with disease of the lungs or heart, or Bright's disease; debility; emaciation; restlessness and anxiety; asthmatic breathing, dropsy.

A dose of the indicated remedy three times a day. A nutricious, easily digested diet is essential, attention to personal hygiene, and remaining indoors in cold, damp and changeable weather. A warm, dry climate is desirable, especially where there are pine groves. Read the recommendations under acute bronchitis. Syrup of tar or wild cherry may prove a palliative when the cough is very annoying, or drop doses of chloroform on sugar. The inhalation of preparations of beechwood tar, creosote, or eucalyptol by means of a hot air inhaler purchasable at any drug store with directions for use, frequently gives considerable relief.

Asthma.—*Bronchial Asthma.*

TRUE asthma is probably of nervous origin and due to spasmodic contractions of the bronchial muscles, although some writers think it caused by inflammation or swelling of the bronchial mucous membrane. Whatever the cause, it is a most distressing affection; chiefly characterized by sudden paroxysms of suffocative breathing generally at night, awakening the patient from sleep. The symptoms are well described in earlier pages of this book under "Asthma." Men are more frequently affected than women. Irritating vapors, fog, smoke, dust, mental shocks and deep emotions may excite an attack, and affections of the nasal passages. In families of a highly nervous make-up the disease is often hereditary.

Arsenicum.—Paroxysms after midnight, obliging the sufferer to sit up at once and bend forward; painful and distressing restlessness; loud wheezing; dry, hard, spasmodic coughing followed by expectoration of frothy mucus streaked with blood; great prostration after the attack.

Ipecac.—Violent constriction of the throat and chest, with shortness of breath and *wheezing* respiration; the sufferer gasps for air at the open window; threatened suffocation; vomiting gives relief; face pale; asthma with bronchitis, and loose mucus in the tubes which cannot be raised.

Grindelia.—Five drop doses of the tincture three times a day, when the patient is subject to asthmatic attacks, and has a nervous fear of going to sleep on account of breath awakening him; the heart's action during an attack becomes weak and feeble, and breathing very difficult.

Nux Vom.—Asthma without bronchitis, but with irritable stomach; coated tongue; constipation; flatulence; for persons using much tea, coffee or alcohol.

Also *Aconite* during an attack excited by exposure to cold air, and in robust persons; full, bounding pulse; heat, restlessness, and perspiration. *Lobelia.* Nervous asthma; nausea; vomiting; vertigo-indigestion; great prostration. *Sambucus.* Asthma in children; quick, wheezing, suffocative attacks after midnight, with crying and profuse perspiration. The indicated remedy may be given every ten minutes during an attack, and three times a day during the intervals. *Persist in its use.*

Hygienic living is essential; no hearty meals at night; digestible food at all times and avoidance of over-eating; change of air is frequently beneficial; the air of the sufferer's room should be fresh and moist.

For relief during the attack get amyl nitrite perles containing two to five drops, and break one in a handkerchief, inhaling the vapor. A cup of very strong black coffee, or the dried leaves of stramonium smoked in a pipe, or burning blotting paper soaked in potassic nitrate and then dried, are about the most effective immediate measures that can be taken. A whiff of chloroform or ether will often give relief. These are not curatives but palliatives, and the indicated remedy should be taken faithfully, and the general health improved.

Lung Fever.—*Pneumonia.*

PNEUMONIA is now known to be one of the infectious germ diseases, to which exposure to cold, unhygienic surroundings, worry and overwork, and alcoholism predispose one. Those suffering from chronic Bright's disease, diabetes, rheumatism, typhoid fever, gout, influenza, bronchitis or diphtheria, are particularly liable to pneumonia. Pneumonia may follow injuries, especially those of the chest. The three stages of this disease are congestion or inflammation, consolidation or hardening of the lung tissue, resolution or softening, and absorption or expectoration of the products of the disease. On earlier pages of this book there will be found an excellent description of pneumonia and its symptoms.

Veratrum Vir.—Severe and long lasting chill, rapid, full, strong pulse which is not lessened by pressing on the artery with the finger; great difficulty in breathing; rapidly rising and very high temperature; throbbing headache. Must be given in the beginning when all the symptoms point to intense congestion.

Aconite.—Symptoms similar to above but less severe, and accompanied with great anxiety and restlessness, also hot, dry skin; intense thirst; hard, dry, teasing cough. This remedy also should be given early.

Bryonia.—This remedy is especially adapted to the second stage when there is exudation in the lung tissue and hardening; severe, stitching or shooting, cutting pain between the ribs; painful cough, with scanty expectoration; patient holds his breath to avoid coughing, and feels more comfortable lying on the affected side.

Phosphorus.—Follows bryonia well when hardening of the lung tissue has taken place, dry cough, with bloody mucus or rust-colored expectoration; great oppression or tightness of the chest; difficult breathing as if there were a weight on the chest; moderate, vaguely localized pain.

Sulphur.—Slow softening and absorption, little or no expectoration; fever; oppressed breathing; feeling of heat in the chest; flushes of heat; the lungs are filled with the secretions and remain hard.

Rhus Tox.—So called "typhoid-pneumonia"; lips and tongue dry, brown and cracked; low muttering delirium, with restlessness; expectoration like prune juice; emaciation; weak pulse; may be pains like rheumatism, and putrid diarrhœa.

Before using Homeopathic Medicines read pages 681 to 684.

Tartar Emet.—Catarrhal pneumonia with great accumulation of mucus in the chest, loud rattling of mucus with great oppression, and very difficult breathing; loose, rattling cough, but patient cannot raise anything; face pale or livid.

A dose of the indicated remedy every one or two hours. The patient should be in a large, well-ventilated room, temperature about 72° F. The air may be kept moist as in bronchitis. Keep the patient lying down; every two hours give four to eight ounces of milk, egg and milk, egg in coffee, broths or gruels, or give ice cream, grape juice, meat juices, and plenty of water, lemonade if desired. Partial or complete sponge baths while the fever is high and there is much restlessness, are soothing.

Apply antiphlogistine to the chest, or if that is not available, put on a soft cotton jacket or absorbent cotton kept in place by a swathe and straps over the shoulders. Do not put on poultices. For pleuritic pains apply several thicknesses of flannel, sprinkle the outside one with water, and quickly run a hot flatiron over it until it steams; repeat often. Use a hot water bag. When the heart's action is weak give from one teaspoonful to half an ounce of brandy or whiskey, with water; repeating the dose as necessary. The free use of strong oxygen gas is strongly advocated in threatened heart failure, suffocative respiration, and face pale or livid. Also subcutaneous injections of strychnia, 1-100 grain every three or four hours, or 1-50 to 1-100 grain by mouth. The bowels should be kept open by daily injections; this is important.

Pleurisy.

When the pleura, that is, the membrane covering the lungs and lining the chest, is wholly or partly inflamed there is a sharp, cutting pain, worse from coughing, taking a deep breath or moving. Pain is generally preceded by chilliness, fever and a hacking cough. If the inflammation goes on, fluid is secreted in the pleural cavity, and presses upon the lung; this watery fluid may become purulent. The disease may last a few days or many weeks, is excited by cold or wet, and caused by germs.

There is a form of pleurisy called "false pleurisy" or pleurodymia, which occurs between the ribs, and is merely neuralgic from inflammation of the nerves, or due to muscular rheumatism, or uterine disease.

Aconite.—To be of service must be given early; acute pleurisy, coming on with chill, followed by fever; thirst; quick, rapid pulse; skin hot and dry; rapid respiration; great nervous restlessness; stitching pains in the chest; hard, dry cough.

Bryonia.—Acute, stitching pains; worse from motion or breathing; short rapid respiration.

Cantharis.—Follows bryonia well when fluid has formed; heat, burning and stitches in the chest; difficult breathing; scanty urine.

Arsenicum.—Much fluid in the chest; breathing difficult, but little pain; much prostration and weakness; restlessness and anxiety.

Also *Sulphur* in chronic pleurisy when the fluid is slow to absorb. *Phosphorus* when pleurisy accompanies pneumonia or bronchitis. *Rhus tox.* Pleurisy after exposure to wet, or from straining or lifting, with muscular pains and great restlessness. A dose of the indicated remedy every one or two hours.

In false pleurisy *Bryonia* or *Rhus tox.* may be given when the pains are of a rheumatic character. *Cimicifuga.* Neuralgic pains in the left side, just below the breast, and especially when there is some uterine trouble. *Arnica.* Shooting pains, or pains as from a bruise when moving or coughing. May be given in true pleurisy, after an injury to the chest wall.

Give a dose of the indicated remedy every hour or two. The sufferer from pleurisy should have absolute rest in bed, and a liquid diet. Apply antiphlogistine or flannels wrung out in hot water and frequently changed. Do not use cold applications or poultices. Straps, three inches wide, of adhesive plaster, long enough to encircle the diseased side and to extend a short distance over the sound half of the body, may be applied just as the patient has fully let out a breath. Strapping limits motion, and so lessens pain.

In false pleurisy make hot applications or take a sitz-bath. Galvanism is helpful. Uterine derangements should receive appropriate treatment.

Pulmonary Tuberculosis.—*Consumption of the Lungs.*

This is the most frequent variety of consumption, and is caused by the organism known as the bacillus tuberculosis, first described in 1881 by the great scientist Koch. The disease may be acute or chronic, and is characterized by the formation of nodular bodies called tubercles, or by the production of areas of diseased tissue in the lungs. Wherever the disease develops, the tissues become cheesy or hard, and extension of the inflammation and ulceration may follow. Indians and negroes succumb more readily to consumption than white people, but the "great white scourge" is dreaded by the inhabitants of every part of the world. The death rate, however, is being lowered every year, chiefly, and this is a very important point, through people learning how to prevent the disease.

Consumption is an infectious disease transmitted most often by inhalation, that is, the germs entering the lungs in the air breathed in. These germs are in the expectoration of the person suffering from consumption, and every time he spits, unless into a receptacle that is afterwards burned or that contains a strong disinfectant, he may be giving consumption to someone, for the sputum dries, and the germs enter the air as a fine dust to be breathed in at once by other people, or to be deposited on carpets, clothing, utensils, etc., and the contagion carried about, or conveyed back into the atmosphere. The germs are very tenacious of life, and will infect a person long after they are thrown off by a consumptive. This is why persons contract consumption living in a house where someone has had the disease. The germs may be taken into the system by eating meat from an infected animal, or using a consumptive's dishes, or clothes, or through the bacilli touching an abrasion on the skin or lips.

People very seldom inherit consumption, but often inherit the tendency, that is, constitutions which offer a fertile field for the development of the germs. Pulmonary consumption is more common between twenty and thirty, and in women than men, but no age is exempt. Many conditions favor its development, such as confining work in ill-ventilated rooms; lack of proper nourishment; living in damp houses or crowded tenements, under unhygienic conditions; bronchial affections; syphilis; alcoholism; wounds of the chest, or injuries to the lungs; many organic diseases, and occupations such as stone cutting, coal mining, etc.

In acute consumption, "galloping consumption," the onset of the disease may be sudden, with chill; pain in the side; fever; cough; bloody expectoration or bleeding; distressed breathing; much fever; night sweats; rapid emaciation; great prostration; and a semi-purulent expectoration in the later stages. The disease may terminate fatally in two to six weeks.

"Galloping consumption" may affect the bronchial tubes as well as the lungs, and follow whooping cough, measles or other infectious diseases in children. These cases may recover, chronic consumption result, or death ensue.

The early symptoms of chronic tuberculosis of the lungs are in general, slight fever; irritable pulse; emaciation; languor; capricious appetite or loathing of food; indigestion; sweats, and impoverished blood. There also develop cough; expectoration; pain in the chest; bronchial catarrh; bleeding from the lungs. What is discovered in all these cases by examination of the chest, is described elsewhere in this book. Diagnosis is best confirmed by the finding of the bacillus in the expectoration. Early diagnosis is of the greatest importance, that the disease may be treated during the curable stages.

Arsenicum.—In incipient consumption, especially when there is rapid loss of weight, and in "galloping consumption," with great prostration; rapid emaciation; hectic flush of the cheeks; fever; cough; interference with breathing. In the later stages *Arsenicum iod.*, when the expectoration is semi-purulent; the prostration great, and diarrhœa present.

Phosphorus.—Especially in consumption following pneumonia, and in tall, thin, "hollow chested" persons; young people growing rapidly; great debility; frequent attacks of bronchitis; dry cough; soreness in the larynx and trachea; long-continued hoarseness, and sometimes loss of voice; blood-streaked expectoration; tightness across the chest; hectic fever; night sweats; diarrhœa after meals.

Calcarea Carb.—In incipient consumption in fat, fair persons, or in rather phlegmatic, scrofulous children who cannot eat fat; young girls in whom the monthly flow is too frequent and profuse, or disappears; free perspiration; "acid dyspepsia"; nose-bleed; sensitiveness to cold or damp, slight effort causes fatigue. This remedy in these cases has loose, rattling cough, with yellow expectoration; persistent hoarseness; soreness in the chest; diarrhœa.

Iodide of Antimony, 2 x.—Three-grain doses, three times a day in consumption in scrofulous persons, with good appetite, but fast losing flesh; enlarged glands; persistent, short, hacking cough; profuse, partly purulent expectoration; morning sweats.

Nux Vom.—For digestive disturbances when prominent; morning headache; sour, or bitter taste; vomiting, or violent retching; neuralgic pains in stomach; constipation, with ineffectual urging.

Sanguinaria.—"Galloping consumption," especially when following pneumonia; hectic fever; circumscribed redness of cheeks; loose cough, but expectoration difficult; cough worse lying down, oppressed breathing; bleeding from the lungs.

Stannum Iod.—Especially when there is also consumption of the throat; profuse, sweetish tasting greenish or partly purulent expectoration; flushed face; emaciation; rattling of mucus, and soreness and weakness in the chest; debilitating sweats night and morning; reading or talking cause great fatigue.

Ferrum Phos.—Bleeding from the lungs with consumption, especially in young people; fugitive pains in the chest; difficult breathing and palpitation; thick, frothy expectoration streaked with blood; may be vomiting; sensation of fullness in the stomach. Consult the remedies given under "Bleeding from the Lungs."

Also *Agaricine*, 1 x. one tablet at night, or repeat the dose in two hours, for profuse sweating, or in "galloping consumption" with drenching sweats where Agaricine is not effective, give *Pilocarpine*, 2 x. *China*, 1 x, great debility following profuse sweats, diarrhœa, seminal emissions, leucorrhea; weak voice; impoverished blood supply Having selected the indicated remedy give it three times a day unless otherwise directed.

The main reliance in the treatment of consumption must be placed in a proper mode of life under favorable climatic conditions, meaning an equable climate, with pure dry air, and a large proportion of sunny days. The patient should be out of doors practically all the time, sleeping on a piazza rather than in the house, even if there are many windows in the room and kept wide open. With rugs and hot water bags a patient can be kept comfortable in the coldest weather. Woollen underwear should be worn all the year round, but clothing so heavy as to cause perspiration should be avoided. Systematic deep breathing exercises must be performed several times a day. The amount of exercise must depend on the strength of the patient, and rest out of doors must be substituted for exercise when there is fever.

The diet must be simple, generous, and nutricious, cream, milk and eggs especially; meat juices, white of egg; peptonized or malted milk; koumiss; buttermilk. Cod liver oil is valuable if it can be taken. Malt liquors and the red wines may be beneficial. Nourishment should be given every two or three hours. Cold sponge baths may be taken daily; alcohol baths for the night sweats. Every consumptive should use a spit cup which can be burned, or which contains a strong disinfectant, as carbolic acid 1 to 20, and can be thoroughly cleansed. No handkerchief should be used, but pieces of cheesecloth or soft cotton to be afterwards burned. Children of consumptive tendencies should have nourishing simple food; be out of doors a great deal; go to bed early; take daily cold baths with friction; keep out of school if necessary and away from excitement. Delicate persons especially should avoid the use of alcohol, sexual excesses, overwork and worry. Catarrhal affections of the nose or throat should receive prompt attention.

Bleeding from the Lungs.

Bleeding from the lungs may be caused by wounds rupturing the lung, congestion caused by heart disease, by ulcer, cancer, yellow fever, scurvy, violent paroxysms of coughing as in whooping cough, etc., but most commonly bleeding from the lungs is associated with consumption. The blood is nearly always bright red and frothy, may simply well up in the mouth or be preceded by a slight cough. The attacks are generally sudden, and may be preceded by a sense of warmth under the breast bone, sweetish taste in the mouth, headache, vertigo and palpitation of the heart. There is fever, and the sufferer is anxious and irritable.

Aconite.—Bright red blood; incessant, hacking cough; warmth in the chest; red face; great anxiety; full, bounding pulse.

Ipecac.—Sensation of bubbling in the chest, followed by copious bleeding, worse on the least movement, of bright red, frothy blood; oppressed breathing; faintness; nausea.

Hamamelis.—Blood dark, thin, coming into the mouth without effort, like a warm current.

Millefolium, 1 x.—Bleeding not relieved by aconite; profuse flow of thin, bright red blood, with oppression and palpitation, but not much cough.

Ferrum Phos.—Free, slight bleeding of bright red blood in delicate persons of a consumptive tendency or having consumption; dry, hacking cough with pressure on the chest.

A dose of the indicated remedy every fifteen minutes. Let the sufferer assume a semi-recumbent position, with head and shoulders elevated, and in a cool room which must be kept absolutely quiet. Do not give stimulants. In the absence of medicines put a small pinch of salt on the tongue. Small pieces of ice may be swallowed. If fainting occurs, do not attempt to revive the patient at once as temporary loss of consciousness is beneficial. Injections of normal salt solution are recommended after profuse hemorrhage, but require the skill of a physician. A hot water bag partly filled with hot water, temperature 120° F., (use a bath thermometer) should be applied to the back between the shoulders.

Baldness.—*Alopecia.*

PREMATURE baldness is often caused by dandruff. Thin hair may be hereditary and the little hairbulbs be only imperfectly developed. Other causes are old age, fevers, syphilis, violent emotion, parasitic diseases, continuous wearing of a hat, and using a comb to the exclusion of a brush. One form of baldness, alopecia areata, is thought by some authorities to be due to an affection of the nerves, others claim a parasite as the cause. In this form round or oval, limited patches become bare on the scalp, or more rarely in the beard, eyebrows or eyelashes. Recovery takes months and even years, and may never occur.

Phosphoric Acid when the hair turns gray or flaxen early, especially after grief; itching of the scalp, debility.

Arsenicum.—Hair falls out in circular patches; general health impaired; scalp sensative to the slightest touch.

Also *Fluoric acid* when there is a syphilitic taint.

Graphites.—Bald spots on both sides of the head, with itching, moist eruptions.

Preparations containing iron and strychnia are serviceable when there is much debility, also cod liver oil when the body is not well nourished. Galvanism is helpful.

In premature baldness the daily application of the following lotion is recommended: Carbolic acid, one drachm; tincture of nux vom., four drachms; tincture of red cinchona, four drachms, and eight ounces each of Eau de Cologne and castor oil well mixed and well shaken. In alopecia areata rub thoroughly into the bald spot with a brush at night the following: bichloride of mercury, two grains to half an ounce each of alcohol and water.

Ring-Worm on the Scalp.

THIS is a highly contagious disease occurring generally in childhood, communicable by the comb, brush or even towel used by the person affected. It is caused by a parasite and appears first as small, separate, round or irregularly shaped, reddened, scaly patches, turning to little vesicles in which pus or matter appears, dries up and scales off Ringworm spreads rapidly; the hair becomes dead looking and brittle, breaks off unevenly; the scalp looks like goose-skin, while the patches often run together and may spread to the face.

Sepia is an excellent remedy, where the sufferer is in good general health *Calcarea carbonica* in fair, fat, or scrofulous children, with perspiration of head and much itching of scalp. *Sulphur* in obstinate cases; many crusts form, with pus, itching and burning. *Tellurium* when the patches seem to come in clusters. A dose of the indicated remedy morning and night.

After softening the surface for two days with olive oil, then giving a soap shampoo, a few diseased hairs may be pulled out at a time with small, short, broad-bladed forceps, and an ointment rubbed in made of boracic acid, fifteen grains; sublimed sulphur, fifteen grains; and vaseline, one ounce. A good lotion is made by adding two to five grains of corrosive sublimate to one ounce of water or alcohol. It may be used instead of the ointment. Observe great cleanliness; build up the general health with milk, eggs, cod liver oil, cream, and good broths. No other person should use the comb, brush, towel, hat, or clothes of the sufferer. Persevere in treatment and be on the lookout for a relapse.

Ring-Worm of the Beard.—Barber's Itch.

Tinea Sycosis.

LIKE ring-worms of the scalp, this is a highly contagious disease, generally contracted in a barber's shop from infected soap, brushes or razor, or the unwashed fingers of the barber, but may be acquired from horses or cattle. The disease begins as reddish, rounded, branny patches from a pea to a small coin in size, and with a small-sized watery point in which matter forms. The nearby hairs become brittle and diseased. In bad cases hard, nodular patches become quite extensive; crusts form from the pustules, and the hair of the beard in the affected area can easily be pulled out.

The remedies and other treatment given under "Ring-worm of the Scalp" are equally indicated for ring-worm occurring elsewhere, but when the beard is affected it should be kept shaved close to the skin. It must be borne in mind that having an individual cup, brush and razor at one's barber's is no guarantee of immunity unless his hands are thoroughly cleansed, a fresh towel used, and a separate strop.

Ring-Worm of the Body.—*Tinea Circinata.*

LIKE other forms of ring-worm, this also is contagious. The patches in the beginning are usually reddish, irregular and the size of a pea. In a few days they become circular, slightly reddened or raised on the edge. The extension of the patches rarely exceeds five or six inches. There is scaling, and when watery little points appear or pimples containing pus, crusts may form. The disease is more common in warm climates, and occurs most frequently on the face, neck, and back of the hands. There is slight itching and burning.

Give the indicated remedy as above. Scrub each patch with *spirits of green soap*, or olive oil or castile soap and water, and apply a two per cent. solution of formalin. Consult the general directions under "Ring-worm of the Scalp."

Blackheads.—*Acne.*

ACNE is an inflammatory affection of the sebaceous glands, and blackheads are one of its symptoms. Although the latter may appear on the chest, shoulders and back, they are most frequently seen on the face, causing great annoyance to the person afflicted. A description of them is given on page 155. A noted dermatologist says that eighty-three per cent. of all cases of acne are due to constipation or indigestion or to both. Other causes include uterine disease, cheap cosmetics, want of cleanliness, exposure to heat or cold winds, some varieties of soap, debility, rich or insufficient food, intemperance, sexual excesses, and changes in the system at puberty. Few cases are incurable, but the majority require months of treatment which should be internal and constitutional, as well as internal and local.

Antimonium Crud.—Small red pimples about the face, and on the right shoulder, stinging when touched; acne in drunkards with gastric derangements, severe thirst and white-coated tongue.

Calcarea Carb.—Acne on the face and neck; when due to sexual excesses; redness of the nose in consequence of difficult or scanty monthly flow; persons with scrofulous constitutions or who work much in water.

Hepar Sulph.—Painless pimples on the nape of the neck, forehead and chin; crusty pimples on the face in young people; swelling and suppuration of glands; skin yellow and unhealthy, every small injury suppurates.

Before using Homeopathic Medicines read pages 681 to 684.

Nux Vom.—Indigestion with constipation; small fetid ulcers in the mouth and throat. Pimples on the face in persons using wine, liquors, tobacco, patent medicines, or coffee in excess; sedentary habits.

Sepia.—Acne on the *chin*, worse during the monthly flow and pregnancy; pimples about the genitals, legs and in the creases of the joints; skin dirty-yellow and scurfy; ailments following vaccination or masturbation.

Silicea.—Obstinate cases in scrofulous persons; bad-smelling foot sweat; constipation, symptoms worse from wine or getting wet or cold.

Sulphur.—Blackheads and little black pits in the face; red, itching pimples on the nose, lips, around the chin, and on the forearm; tendency to boils; chronic cases.

Mercurius Sol.—Indolent, bluish-red pimples, especially the lower extremities, in syphilitic or scrofulous persons; suppurating pimples as above; glandular swellings.

Arsenicum.—Chronic cases where the skin is dry, rough and dirty-looking; the eruption mostly on the face and extremities; blackheads which itch and are painful.

A dose of the indicated remedy may be taken three times a day. Do not eat highly seasoned food, pickles, cake, pastry, nuts, cheese, fried foods, hot bread, sweets, or drink beer, spirits, cocoa, chocolate, or much coffee. Drink water freely, especially hot water in the morning before breakfast. Iron and cod liver oil are indicated in debilitated or scrofulous persons; fresh fruits and vegetables if they agree. Outdoor life, and frequent thorough bathing with friction. Sulphur and iodide of sulphur soaps, and good tar soaps are the best. Shampoo the affected parts every night—after a warm sponge bath of the entire body—with a flannel cloth, warm water and soap. If the skin is sluggish and the acne chronic, use tincture of green soap. Dry, and apply sulphur ointment, or when there is suppuration, an ointment of sulphur, five per cent., ichthyol, five per cent., and vaseline, one ounce. For other local applications consult the section on this subject on page 176.

Erysipelas.—*St. Anthony's Fire.*

ERYSIPELAS is an acute inflammatory disease of the skin and tissue beneath, caused by a germ and ushered in by debility, loss of appetite, headache, chilliness, coated tongue, nausea, increase of temperature (102 to 105 degrees), rapid pulse, and followed by continued high temperature and the speedy appearance of an inflamed patch generally on the face or head, but may occupy a portion of the body or an entire limb. The affected area is of a glossy red, bright, shiny, with marked swelling, feels hot and firm and is sensitive to the touch; there is pain, burning and itching. Inflammation often extends rapidly; watery pimples or blisters may form, and finally pus. The disease should subside in a week unless complications occur involving the brain, lungs, heart, kidneys, etc., dropsy develops or an abscess forms. It is now believed that the erysipelas germ always obtains admission to the system through some abrasion of the surface, as through wounds, vaccination, skin diseases, etc. Whatever diminishes the vitality of the system predisposes one to the infection, also alcoholism and kidney diseases.

Apis.—Much swelling; skin puffy and pale; stinging, burning, prickling pains, or sore, bruised feeling; skin sensitive to slightest touch; erysipelas of the face and scalp, with puffiness of the eyelids; chronic erysipelas occurring about once so often.

Belladonna.—High fever; skin smooth, shining, bright; congestion of the head; sometimes delirium; severe headache; great thirst, dry tongue, parched lips; tendency of the inflammation to spread in streaks.

Rhus tox.—Watery blisters (vesicles) on the face or body; itching, and burning after scratching; dark bluish-redness of the affected part; bruised feeling in the back and limbs.

Arsenicum.—This remedy follows *Rhus tox.* well when the disease shifts from one place to another, and tends to attack internal organs; great restlessness and sinking of strength; skin bluish or black and blue; burning pains; quick, wiry pulse; grave cases.

Cantharis.—An excellent remedy when watery blisters form, and in them as well as elsewhere there are fine stinging, burning pains; much inflammation; urine burns and is scanty or can not be passed; patient very restless and uneasy.

Also *Aconite* in the beginning with high fever. *Arnica* when the inflamed surface is extremely tender, and painful on pressure; hot hard, shining, deep red and patient feels as if he could not bear the pain.

Painting the affected surface with collodion will in ordinary cases often relieve the pain, and limit extension of inflammation. Cold water dressings, renewed before they become warm, are valuable. Rye flour or powdered starch may be dusted on as a dry dressing. A cranberry poultice made by mashing the raw berries with cold water to form a paste is a good and simple application. An ointment of lanolin containing twenty-five per cent. of ichthyol, or a lotion with the same proportion of ichthyol, or a drachm of the hyposulphite of soda to one ounce of water can be recommended. Isolate the patient in a well-ventilated room; keep him in bed, and scrupulously clean; at regular intervals give highly nourishing food such as milk, malted milk, chicken and lamb broths, meat juices, panopepton, trophonine, peptonized milk, plenty of water, and no alcoholic stimulants unless the pulse is weak, and the patient collapsed.

The injection of about 20 c. c. of anti-streptococci serum every eight hours is one of the most modern methods of treatment.

Prickly Heat.

In hot weather the sweat glands of the skin often become congested or even inflamed from excessive stimulation by heat. There is an eruption of tiny pimples of a bright red color, sometimes with watery vesicles interspersed, and tingling and prickly sensations, annoying and, at times, unbearable. The upper part of the forehead, and the parts of the body covered by the clothes are most subject to these attacks.

Bryonia.—Prickly heat from getting overheated either by exercise, working before a furnace, ironing, etc.; red rash over the whole body; profuse sweating on slight exertion.

Arsenicum.—Prickly heat, with watery vesicles, burning, itching and crawling sensations, especially at night; general debility, indigestion.

Ledum.—Red, pimply eruptions, especially on the face and forehead; with intense itching, worse from scratching and from the heat of the bed; prickly heat, with sensation as if bitten by insects.

Urtica Urens—Extremely distressing burning heat of the face, arms, shoulders and chest; with crawling sensations, numbness, and violent itching.

Also *Sulphur* for scrofulous persons, and those subject to skin eruptions, especially with watery blisters or vesicles, with much itching, burning and tingling, worse after rubbing and from warmth or bathing. *Apis.*—Stinging, smarting, prickling, burning or itching of the skin, nettle-like eruption. A dose of the indicated remedy every two hours.

A bran or oatmeal bath with a little carbolic acid solution in it, then mopping the skin perfectly dry without rubbing, and dusting on subnitrate of bismuth and starch powder, or lycopodium powder is the best local treatment. Keep babies and young children out of the sun during the warmest hours of the day; do not use ice water; always purchase the purest soaps, and rinse the skin thoroughly after using. Hind's Honey and Almond Cream is a harmless and soothing lotion.

Malignant Pustule.—Anthrax.

Wool-Sorter's Disease.

Men who work among cattle or sheep, dress hides, etc., are liable to contract this disease by inoculation or inhalation of the germ, or by eating diseased meat. Abrasions on the skin become infected when handling diseased hides, rags, wool or hair, or instruments; flies or mosquitoes may carry the infection. The disease develops in from one to five days after exposure.

The malignant pustule caused by inoculation is most apt to appear on the face, hands, or arms, as a small pimple with itching, smarting and burning pain as from the bite of an insect. Watery or bloody fluid forms in the pimple which is surrounded by little pimples, and there is swelling, also inflammation of the nearby glands. In severe cases there are marked constitutional symptoms, fever, prostration, sweat, enlarged liver, and spleen, dry tongue, and may be delirium-stupor, collapse and death in from four to eight days.

There is a form called malignant edema, without pustules, but where the swelling is very extensive. In the internal form caused by eating infected meat, there are all the symptoms of acute poisoning, chill, prostration, headache, pain in the intestines, nausea, vomiting, and frequently death. Wool-sorter's or rag-picker's disease is characterized by chill, then fever with high temperature, labored respiration, bronchitis, pains in the back and legs, and great nervous depression.

The indications for internal remedies are few; but internal medication is of importance, and should be persisted in.

Arsenicum.—Painful and malignant pustule, with great prostration and restlessness; constant thirst, but drinking little at a time; depression of the nervous system, and when stomach symptoms are prominent with pain, nausea, vomiting and retching; mouth dry; tongue red; small weak pulse. Give at once in the beginning of the trouble, a dose every hour or two.

Lachesis.—Bluish color of the pimple, with radiating red streaks, swelling about the pustule.

Anthracinum.—Symptoms resembling those calling for *Arsenicum*, but even more intense, and apparently blood poisoning of the entire system.

Rhus Tox.—Great restlessness; violent pains somewhat better while the patient is moving about; burning itching around the pustule; vertigo; aching pains in the limbs, may be mucous diarrhœa.

Secale.—Coldness of the skin, with clammy perspiration; pimple bluish, not much inflammation but tendency to sloughing; pale, anxious countenance, eyes sunken, and blue circles about them.

A dose of the indicated remedy every hour. When there are pustules they should be cut out, and pure carbolic or nitric acid applied to the raw surface, or the electro-cautery may be used. If swelling predominates incisions may be made, or a few drops of carbolic acid, 1 to 10, injected at the base of the swelling. Compresses saturated with bichloride of mercury solution, 1 to 1,000 may be applied. Stimulants are necessary when there is great prostration and feeble action of the heart; system must be well nourished.

Before using Homeopathic Medicines read pages 681 to 684.

Itching of the Skin.—*Pruritus.*

Pruritus is always secondary to some disturbance of the nervous system, occurs at all ages and in both sexes, but its aggravated forms are peculiar to middle life and advanced years. It frequently is a symptom in disturbances of the stomach, liver and intestines, in derangements of the urinary system and genital organs, and may be caused by worms in the rectum, piles, a too stimulating diet, sedentary habits or perversion of the sexual functions. Pruritus is common in gouty and rheumatic persons. Itching of the anus is one of the most distressing forms.

Arsenicum.—Crawling, burning sensations; intolerable itching of the genitals; itching of the anus, with burning, or an eruption emitting a small drop of watery fluid; chronic cases.

Mercurius Viv.—Itching as from fleas; may be pleasant, voluptuous itching, or burning or tickling; itching of the genitals; of the anus with moisture, burning and smarting, worse at night.

Pulsatilla.—Pruritus in women during monthly flow or pregnancy; itching as from ants.

Sulphur.—Severe itching and burning of the anus, keeping the patient awake at night.

Rhus Tox.—Itching, redness, swelling and tingling of the parts.

Nux Vom.—Itching after stimulating food and alcohol, with indigestion; sexual organs especially.

A dose of the indicated remedy every four hours. Regulate all the habits especially the sexual life, and exercise and diet. Scratching is most harmful, and temporary relief may often be obtained by pressing firmly on the surface or by gently drawing over it an oiled or wet cloth. When the skin is free from abrasions alternate hot and cold douching, or even the cold salt water sponge will improve its tone. A simple application is made by adding one ounce each of hyposulphite of soda and glycerine to three ounces of water. Lotions containing carbolic acid are probably the most effective, and may be obtained at any drug store. The long continued application of even a weak solution of carbolic acid may cause gangrene of the skin. Always use a dusting powder after drying the skin. A saturated solution of boric acid, or the compound tincture of benzoin may be painted on the genitals. The general health should be improved; organic diseases receive appropriate treatment, and the garment worn next the skin should not be of wool.

Cancer of the Skin.—*Epithelioma.*

Epithelioma is distinctly the product of long continued irritation, generally changing some primary benign condition to one of malignancy. Thus a wart, pimple, hardened gland, or a circumscribed excoriation as of the lip from a pipe or cigar may after some years become the starting point of a cancer. Nearly three-fourths of all cancers of the skin occur on some part of the head or face, most frequently after forty years of age, and more often in men than in women.

When occurring without any previously existing affection, an epithelioma is first noticeable in the form of a few greasy scales, a papery crust covering three or four shallow ulcers, or a hard bluish nodule varying in size. It may be superficial or extend quite deeply into the tissues; occur on the genitals, extremities, on the lip or any part of the face and head; may be indolent or of rapid growth; curable or incurable, but usually the outlook is serious.

Remedies that may be given internally are *Thuja* for warty growths with the symptoms given under "Warts"; *Arsenicum* in undoubted malignancy, with itching and burning pains, ulceration, and depression of the whole system. *Nitric acid.* Bluish-red, nodulated, roundish ulcer; bleeding easily; unbearable burning pain worse from eating and drinking; cancer of the mucous membrane especially. *Petroleum.* Nodules on wrists, hands, arms, feet and legs; pimples in the folds of the genitals. *Conium* or *Causticum* recommended to prevent horny excrescences assuming a cancerous character. A dose of the remedy selected twice a day.

Local treatment should be promptly instituted, so promptly, indeed, that warts, fissures, erosions, or other abnormal conditions of the skin should never be neglected or allowed to persist, with the always present possibility that degenerative changes may take place. Internal remedies will improve the general condition, and supplement other measures, but the x-rays or the knife should be resorted to as early as possible. The results of treatment of superficial forms of cancer, especially by the x-rays, are very encouraging, and in very large cities leading surgeons and specialists in skin diseases have the necessary apparatus. Do not try "cancer cures," but go to a qualified practitioner, whether allopath or homeopath. Treatment by the x-rays is painless, and the skin less liable to be badly scarred than when the knife is used. Caustics are frequently used to destroy cancer of the skin, but we cannot recommend their use by the laity. Growths are also cauterized by means of electricity.

Whitlow.—Felon.—*Paronychia.*

A "run round" of whatever degree is an exceedingly painful affection. It affects the end of a finger or thumb causing inflammation and swelling, and excruciating pain, especially when the covering of the bone is involved. Pus may form, the nail be affected and come off. One run round may be followed by others.

Hepar Sulph.—Give early before suppuration occurs, when there is redness, tenderness, and more or less swelling; or after suppuration is established. A dose every two hours.

Before using Homeopathic Medicines read pages 681 to 684.

Silicea.—A most valuable remedy; especially in bad cases with the bone involved; burning, tearing, sticking pains better from warm applications, worse from cold; suppuration; slow-healing. A dose every three hours.

Fluoric Acid.—Bone felons, with offensive discharge in persons subject to skin eruptions; pain and other symptoms better from cold applications, worse from warm. Give as above.

A felon, accompanied by the characteristic hammering, throbbing pains, may sometimes be aborted by the following simple treatment: Pour one-half pint of boiling water on a handful of fresh wood ashes, making a strong lye. Thrust the finger into the lye which must be as hot as can be borne. After a few minutes remove the finger, and apply compress wet with the hot lye. Repeat the treatment in three or four hours, if necessary. An excellent application relieving inflammation and swelling is antiphlogistine. Plaster it on, cover with absorbent cotton, and renew daily. Free incision should be made with a sterilized lancet as soon as pus forms, and the wound cleansed with an antiseptic such as peroxide of hydrogen or listerine. It is well to keep the hand in a sling; the hand should be higher than the elbow.

Warts. *Verrucæ.*

COMMON warts consist of a pin-head to bean-sized circumscribed elevation of the skin due to excessive growth of little end expansions of vessels and nerves in the skin. The precise cause of these warts is unknown, but in many instances they seem to be contagious. There are other kinds of warts, those in old people, may be due to changes in nutrition of the skin, or may precede the development of cancer of the skin. Venereal warts are due to specific infection, and warts in tuberculosis to the bacillus of that disease. Fig warts are excrescences shaped like a fig. The common warts here referred to may often be cured by the use of the indicated remedy; this will not interfere with local treatment.

Thuja.—Wart-shaped excrescences here and there, especially on the hands and genitals, but may appear about the head and ears; warts after gonorrhea; come in groups or crops; seed warts or fig warts that are moist or suppurate.

Nitric Acid.—Warts especially on the arms, head, neck and nose; moist, bleeding, inflamed; cauliflower warts; may be hard and horny or large and fleshy; burning, pricking or painful; fig warts that split or crack.

Antimonium Crud.—Flat, horny warts in fair, fleshy, children.

Causticum.—Small, horny or hard old warts, may occur all over the body; may be large and fleshy, painful, stinging, inflamed and moist: warts on the nose, face or hands.

A dose of the indicated remedy three times a day. When taken internally, thuja may be used as a lotion also, twenty drops of the tincture to a cupful of water. Warts may be removed by the knife, electro-cautery, nitrate of silver, pure nitric acid or other caustic. Venereal warts should be kept clean, washed with a solution of peroxide of hydrogen, dried thoroughly and kept dusted with calomel.

Inflammation of the Glands of the Groin or Armpits.

While inflammation of these glands is most common in persons of a scrofulous constitution, swelling, soreness and even suppuration may be due to other causes. Glandular enlargement may accompany the eruption in measles, or be present in hereditary syphilis, typhus fever, scarlet fever, tuberculosis, during the change of life, and in disease of the blood with impoverishment of the blood supply, great disturbance of nutrition, and more or less enlargement of the spleen. Sometimes injuries to the upper extremities cause inflammation of the glands under the arms, and to the lower extremities of the glands in the groin. Consult the remedies given under "Scrofula."

Belladonna.—Enlargement and hardening with heat and redness of the glands under the arm, especially in women at the change of life; also, during scarlet fever.

Alumina.—Swelling of the glands or a gland in the groin in gonorrhea, with yellowish discharges from the male organ, and itching and burning along the urinary passage.

Carbo Animalis.—Enlargement of the glands of the groin and armpits, feel hard like a stone, especially in syphilitics.

Conium.—Stony hardness of the glands, with little or no pain, after a contusion or bruise, or in enlargement and hardness of the glands in persons with scrofula or cancer in the family.

Also *Hepar sulph.*, *Calcarea carb.*, *Iodine*, *Sulphur*, etc., as given under "Scrofula," and *Silicea* when glands have broken down and discharged matter, yet feel hard and are slow to heal. *Mercurius.* Enlarged glands in syphilitic or scrofulous persons, with or without suppuration. *Phytolacca.* Inflammation and swelling of the glands, with rheumatic pains; may be ulceration. A dose of the indicated remedy three times a day.

When pus forms in an enlarged gland it should be evacuated, and the wound cleansed with an antiseptic wash such as listerine and water, 1 to 4, or corrosive sublimate 1 to 1,000. Gauze wet with tincture of calendula, 20 drops to a cupful of water, may be used as a dressing, and covered with oiled silk and a bandage. When the glands are merely sore and inflamed, antiphlogistine makes a most excellent application. In syphilitic cases a mercurial ointment may be applied.

Before using Homeopathic Medicines read pages 681 to 684.

Scrofula.

SCIENCE tells us that scrofula is a form of tuberculosis caused by the same variety of rod-shaped cell called a bacillus. The form of scrofula to which this section refers is that manifested by swelling of the glands under the jaws, in the neck, groin, and under the arms. For a detailed description see page 529. Infection may take place through the tonsils, the lining membrane of the nasal passages, or through abrasions of the skin. It is most often poorly nourished children and adults who are affected, especially those living under unhygienic conditions. Sometimes the glandular trouble accompanies consumption of the lungs.

In children of a scrofulous constitution humors and sores on the skin are common, healing is often slow, and recurrence frequent. Remedies used homeopathically are of great value, because correcting the constitutional condition which favors the development of the disease locally.

Calcarea Carb.—Enlarged glands in plump, fair-skinned individuals; tendency to grow fat; take cold easily, feet damp and cold; perspire profusely.

Baryta Carb.—Painful, hard swelling of the glands under the jaw or in the back of the neck, especially after influenza; in children subject to inflammation and swelling of the tonsils, and who develop slowly mentally.

Hepar Sulph.—Enlarged glands which tend to suppurate, and break down; skin unhealthy, even slight injuries are slow to heal, and matter forms.

Mercurius Viv.—Scrofulous somewhat emaciated individuals, especially children, with large heads; limbs cold and damp; oily, offensive perspiration of the head; enlarged glands suppurate and discharge pus.

Silicea.—A valuable constitutional remedy when the bones as well as the glands often seem to be affected; sour or offensive perspiration at night; sensitiveness to cold air; large head and distended abdomen; glands suppurate, and a thin discharge persists.

Also *Iodine* when glands are enlarged and hard, especially in dark-haired, sallow, thin persons. *Sulphur* as a constitutional remedy in dark-complexioned individuals, with dry skin subject to eruptions, sores, cracks, itching and burning; slight injuries are slow to heal. A dose of the indicated remedy may be given three times a day.

Plenty of fresh air; sunshine; nourishing, digestible food, and hygienic surroundings are indispensable. Cod liver oil is both a food and a medicine, and may be given by mouth and also rubbed into the skin daily after bathing. Change of air is frequently beneficial.

Children of a scrofulous constitution should not be allowed to eat sweets, fried food, pastry, cake, pork, griddle cakes, or to spend much time indoors.

Varicose Veins.

SWELLING of the veins near the surface, especially of the legs; with relaxation of the walls, and a more or less permanent distention with the accumulated blood is familiar to all. Tight garters, tight lacing, constant standing, pregnancy, hereditary tendency, and impaired circulation from debility or other diseases are common causes. A vein may burst causing severe bleeding, or ulceration may result. Medical treatment is valuable as a preventive or curative measure, but occasionally must be supplemented by surgical interference.

Hamamelis.—Especially in acute cases; veins inflamed, painful or dilated, and soreness is conspicuous.

Pulsatilla.—Varicose veins occurring during pregnancy; soreness and stinging pains.

Fluoric Acid.—This remedy is recommended by several good authorities as producing shrinkage in the size of the affected veins.

When there is acute inflammation of a vein, *Arnica* is suitable, and later if the veins are blue and livid, with threatened ulceration and burning pains, *Carbo veg.* should be taken. A dose of the indicated remedy morning and night.

Bathe the affected part with *Hamamelis*, and at night apply cloths wet with the same and covered with oiled silk. For the leg an elastic stocking will be found of great service, or bandaging with a rubber or woolen bandage. Keep the limb elevated. If the skin is broken, apply hamamelis cerate; if hemorrhage occurs, the sufferer should lie down and the affected part be elevated, while bleeding is controlled by pressure and cold applications.

Boil.—*Furunculus.*

THIS is a small, circumscribed, painful tumor, which begins in the form of a pimple and increases in size until as large sometimes as a walnut. A boil differs from a simple abscess in having a core of dead tissue, around which the inflammation develops. Modern science is of the opinion that this disease is due to the invasion of a micro-organism, which, entering some tiny gland in the skin sets up changes causing death of nearby tissue, and irritation with inflammation. One boil is frequently followed by another in persons in ill health from anxiety, overwork, unwholesome food, lack of exercise, etc. A boil may be very painful before pus forms, and the tumor softens and breaks down, discharging matter and the hard core.

Belladonna.—If the boil is hard, red and painful, a dose of *Bella-*

donna every hour will often relieve pain and prevent the formation of matter.

Hepar sulph.—Pulsating pain indicating suppuration. The boil will come more quickly to a head through the use of this remedy every two hours.

Arnica.—An excellent remedy to be taken three times a day for a week or two after having boils, to prevent their recurrence.

Sulphur as a preventive is sometimes more effective, especially in persons subject to skin eruptions.

Silicea.—Boils that come in crops are slow to heal and have a thin, watering, bad-smelling discharge or thick pus; also, for the hard spots left by boils.

In its earliest stage a boil can be aborted by introducing a pointed stick of nitrate of silver, and working it thoroughly round; this is, of course, very painful. The galvano-cautery is also used. The injection of two or more drops of carbolic acid (95 %) will frequently abort a boil. Never use a knife on a boil until it is thoroughly ripe. In the very beginning spread antiphlogistine over the affected area only, and cover with gauze or cheese cloth, and absorbent cotton. This will often prevent suppuration, if available, and is superior to poulticing. When a boil is opened by knife, all pus and dead matter should be removed, peroxide of hydrogen, or corrosive sublimate 1 to 1000, used as a wash, and cheese cloth wet with one of these antiseptics applied, or with calendula tincture twenty drops to a cupful of water. Do not poultice after opening a ripe boil, or the formation of more boils will be encouraged.

Carbuncle.—*Anthrax.*

A GOOD description of carbuncle will be found on page 588. A carbuncle is a malignant boil, much harder to heal than a simple boil, and seems to affect the whole system. Spring and summer are the seasons of the year when boils or carbuncles are most likely to develop, and in debilitated people, or persons who make a sudden change in their diet or habits, undergo prolonged fatigue, or those having kidney disease or recovering from long continued illness.

Arsenicum.—Large, painful, malignant carbuncles; cutting, burning pains, worse after midnight, relieved by heat; great prostration and restlessness, much thirst for small quantities of water at a time. A dose every two hours.

Belladonna.—Smooth, bright-red swelling, skin drawn tight; throbbing pain; patient drowsy but cannot sleep; head and face congested; some fever. Give as above.

Bryonia.—Especially recommended to hasten suppuration. Give as above.

Crotalus.—The affected part is bluish, and often surrounded by many small pimples; the skin is very sensitive, with burning, throbbing pains. Carbuncles which slough; are very offensive. A dose every four hours.

Silicea.—To check excessive suppuration, promote healing, lessen the hardness of surrounding tissue, and improve the constitutional condition. A dose three times a day.

Do not poultice a carbuncle. Inject two or three drops of carbolic acid (95%) into each of its openings or in several places, and apply ice bags. If the patient is not suffering from kidney disease, and the carbuncle increases in size, spray the surface with ethyl chloride or inject a few drops of cocaine (4%) to produce insensibility of the part, then open the carbuncle freely with a sharp knife that has been sterilized in boiling water. The incisions should cross each other. All pus and diseased tissue should be scraped out; the wound treated as recommended for a boil. Improve the general condition by a diet of milk, eggs, cod liver oil, beef juice, broths, fresh fruits and vegetables, out-door life, frequent bathing, etc. Always look for the cause of boils or carbuncles, and remove it.

Abscess.

ACUTE abscess may be said in general to be a localized inflammatory condition, characterized by chills, increase of pulse and temperature, redness, heat, pain, swelling, the formation of pus with a tendency to point and discharge matter spontaneously unless prevented by dense tissue structures. A chronic abscess rarely exhibits these symptoms, but forms an indistinct tumor, sometimes difficult to diagnose and often requiring surgical treatment. Abscesses may result from falls; blows; wounds where dirt, nails, slivers of wood, etc., enter or remain in the injured part. They sometimes are caused by diseased bone; they may accompany other diseases, or depend upon constitutional conditions.

Belladonna.—Surface bright red, swollen and tender to the touch; the swelling forms suddenly and develops rapidly. A dose every two hours.

Mercurius viv.—After pus has formed, and to bring abscess to a head; throbbing, stinging pains. Do not give it before pus forms; it follows *Belladonna* well. Give as above.

Silicea.—Continued suppuration after abscess has broken or been lanced; slow healing; offensive discharge. Chronic abscess or abscess of the bone. A dose every four hours.

Calcarea carb.—A good constitutional remedy for those of a scrofulous constitution, or ill nourished; fair complexion; tendency to grow fat; small wounds suppurate; skin eruptions occur frequently; perspire easily.

If any foreign body like a sliver of wood is present, remove it. Spread antiphlogistine one-eighth of an inch thick over the abscess. An abscess should be opened with a sharp, sterilized knife as soon as it points, and the cavity thoroughly washed out with listerine and water, 1 to 4, or carbolic acid and water 1 to 40, or peroxide of hydrogen. Drainage tubes of soft rubber perforated with small holes, are put in the cavity to allow pus to escape. Gauze wet with an antiseptic, or with calendula tincture (see Boils) makes a good dressing.

Iodoform, one part to nine parts glycerine, makes a good emulsion to apply to the cavity of a chronic abscess, after washing with an antiseptic solution. This stimulates healing. Persons subject to abscesses should eat no rich or spiced foods, use no stimulants and avoid all excitement of the passions.

Ulcers.

People of low vitality, of bad habits or inheriting some constitutional defect are most liable to ulcers. There are many different kinds, *e. g.*, the irritable ulcer, red, inflamed, with painful ragged edge; the varicose ulcer, with much distension of the nearby veins, and swelling; indolent ulcer, slow to head; scrofulous and syphilitic ulcers. A bruise, burn or boil may excite the formation of an ulcer. The ulcers occurring within the body will not be referred to here.

Arsenicum.—Intense burning, shooting pains; bloody or thin, acid discharge; superficial, raw looking ulcers that bleed readily.

Kali Bich.—Deep ulcers on the leg, with hard bases and overhanging edges.

Mecurius Sol.—Syphilitic ulcers, superficial, flat, and enlarging rapidly, with thin, corroding, offensive discharge of watery pus.

Nitric Acid.—Ulcers irregular in outline, tending to dip downward deeply; often show profuse granulations; bleed at the slightest touch, sticking, burning pains; excellent for syphilitic ulcers after taking toomuch *Mercury.*

Carbo Veg.—Varicose ulcers with burning pains; skin mottled and small blood-vessels enlarged; in indolent ulcers surrounded by spots like black and blue spots, with thin, corrosive, burning discharge, and hard borders; in cancerous ulcers.

Lachesis.—Skin about ulcer pimply, mottled, blistered, dark-blue or purple; ulcers extend superficially, threatens to involve veins; discharge scanty; the skin may become cold and feel dead; disagreeable odor like a grave.

Sulphur.—Especially useful for chronic ulcers in scrofulous people; excessive itching, with burning pains; thick yellow, or thin offensive discharge. A dose three times a day.

The symptoms given under "Abscess," page 743, for *Calcarea carb* should be read.

Simple ulcers most frequently occur on the arm or leg; when located keep the limb at rest and elevated. Keep the ulcer clean and apply gauze or soft cotton cloth wet with calendula tincture, twenty drops to a cupful of water, cover with oiled silk and lightly bandage. A chronic callous or indolent ulcer should be well scraped and stimulated by the application of nitrate of silver; a varicose ulcer requires support of the veins by a rubber bandage or elastic stocking. Sloughs formed by dead tissue must be removed, and the surface of the ulcer washed with an antiseptic, see treatment of "Abscess," page 580. Pure carbolic acid or nitrate of silver may be applied to an irritable ulcer. All hygienic rules must be observed, and only digestible food eaten.

Chilblains.

THIS common affection affects the fingers and toes, causing reddish or bluish swelling, soreness or inflammation; intense burning and itching. The skin may break down, and a suppurating sore result. Chilblains are most common in the winter time, and in those with lessened vitality or of a scrofulous constitution.

Agaricus.—Itching, burning, redness of the toes or fingers with swelling and great soreness. One of the most useful remedies in the author's experience. Should be taken internally and applied externally also. A dose every three hours.

Arnica.—Hard, shining, unbroken skin; pain and itching of the parts. Give as above.

Arsenicum.—Burning, stinging pains, with ulceration; lack of vitality; feet easily chilled; heels as well as toes affected. Give as above.

Belladonna.—Much inflammation; skin bright-red; throbbing pains; swelling. A dose every two hours.

Sulphur.—Chronic cases; much itching, worse from warmth; the affected part a bluish red. A dose three times a day.

Agaricus tincture may be applied to the affected parts; note the symptoms indicating the remedy. Kerosene gives relief in many cases, also olive oil and turpentine, equal parts. When the skin shows a tendency to blister, apply tincture of cantharis, one part to six parts of soap-liniment.

Remedies must be supplemented by measures to improve the patient's condition both general and local. Take outdoor exercise regularly; wear easy boots; bathe the feet daily with cold salt water, applying brisk friction afterward, snow may be used in place of water; wear woolen or other heavy stockings, no tight garters, and keep away from the fire; eat simple, nourishing, unstimulating food; no alcoholic beverages.

Before using Homeopathic Medicines read pages 681 to 684.

Liver Spots.—*Maculæ.*

Maculæ exhibit a wide variation of color from a rosy pink to a chocolate brown or black, are usually without depression or elevation, occur in patches on the face or elsewhere, and although commonly called liver spots, may be due to any cause resulting in congestion of the arteries or veins, to the escape of the coloring matters of the blood into the skin, or to freaks of pigmentation. They may occur in the course of measles, yellow fever, cancer, impoverished blood, uterine disorders, and many other conditions besides derangements of the liver. When due to the latter cause the patches are frequently yellowish brown, and appear on the face.

Sepia.—Men, but especially women having a yellow, or dirty yellow-brown blotched skin; who are inclined to sweat especially about the genitals, armpits and back; suffer with hot flashes; headaches in the morning, awaken stiff and tired, and are subject to diseases of the sexual organs. There may be biliousness, constipation, sediment in the urine.

Chilidonium.—Yellowish-brown patches in those having affections of the liver, with jaundice, yellow-coated tongue; bitter taste in mouth; pain under right shoulder blade; shooting pains in region of the liver; clay colored or yellowish stools.

Nux vom. and *Sulphur* are frequently helpful. Give a dose of the indicated remedy night and morning until the color fades and the spots disappear. Tea, coffee and alcohol are forbidden, also sugar, much fat in any form, new bread, cake, pastry and fried foods. Lean meat and green vegetables are allowed, also fruits sparingly. Water should be drunk freely, baths taken daily, and exercise in the open air.

Scurvy.—*Scorbutus.*

The cause and symptoms of scurvy are well given on page 530. While medicines occupy a secondary place in the treatment, they are nevertheless of value in cases which do not respond promptly to changes in diet, habits and surroundings.

A form of scurvy called scorbutus occurs in infants and may be mistaken for rheumatism because there is much pain about the knees and legs on motion. But in scorbutus the characteristic symptoms of scurvy are present, the black and blue spots, extreme debility, swelling of the gums, which bleed easily, etc., but it is usually the severe pain in the legs which first attracts attention in infants.

Mercurius Viv.—Scurvy with ulcerated gums; mouth waters constantly; bad breath; puffy tongue; tenderness over the stomach, and diarrhœa.

Muriatic Acid.—Great muscular debility, feeble action of the heart, the patient slides down to the foot of the bed absolutely helpless; ulcers in the mouth, the lips raw and cracked.

Nitric Acid.—Extensive ulceration of the gums; gums white, swollen and bleeding; ulcerated spots on the inner surface of the cheeks; foul breath; profuse flow of saliva; blisters and ulcers on the tongue; tearing, stitching pains; great weakness.

Natrum Mur.—An excellent remedy in cases with dry, yellowish skin; emaciation, debility; sore mouth; ulcers on the tongue and gums; bad breath; headache as if the head would burst; fever blisters on lips; often palpitation of the heart.

Also *Arsenicum* or *Lachesis* when the whole system is badly involved, and the sores and ulcers threaten to become gangrenous; the pains are severe and burning; the face pale and sunken. *China* or *Ferrum phos.* may be given during convalescence, especially after loss of blood and when the patient's recovery is slow, and debility marked. A dose of the indicated remedy may be given three times a day.

The general treatment of scurvy is well outlined on page 531. Infants should be given fresh cow's milk; cream; beef-juice; orange or lemon-juice, and if the child is over one year, bread and butter and baked potato.

Itch.—*Scabies.*

SMALL pimples first appear between the fingers, in the bend of the wrists or elbows, the groin, under the arms or, in women, the breasts, and about the ankles in children. The face is not affected. The cause of the disturbance is the itch-nute or acarus. A good description of this parasite will be found on page 167. The local treatment is of special importance in these cases, but internal remedies also should not be neglected.

Sulphur.—The leading remedy; tingling, itching, burning and soreness after scratching; worse when warm in bed; rawness of the surface; glandular swellings.

Mercurius Viv.—Itching all over, and especially in the bends of the elbows, if some of the pimples contain pus; worse at night in bed, cannot sleep for the itching; diarrhœa.

Arsenicum.—Inveterate cases; eruption in the bends of the knees; burning and itching; symptoms better from external warmth.

Croten Tig.—Itching and painful burning, with redness of the skin; formation of watery pimples, and pimples containing pus; drying up and scaling off of pimples.

The patient should soak in a warm bath fifteen minutes, then be rubbed all over with soft soap and a flesh brush, to break up the burrows made by the itch-nute. Wash off the soap, thoroughly dry the surface and rub in sulphur ointment, strength 20 per cent. Do this at night, and have fresh bed linen, also in the morning put on new underclothes. Everything worn previously or used on the bed should be baked or boiled for an hour or two. Renew the ointment the second and third night, and the fourth night take a warm bath, dry the skin and dust on talcum powder; change the underclothing and bed linen again, and treat that discarded as above. The treatment may be repeated in a week if necessary; it is not advisable to use such measures so continuously as to set up a bad inflammation of the skin.

Nettle Rash.—Hives.—*Urticaria.*

URTICARIA is an inflammatory affection of the skin characterized by the formation of whitish and pinkish elevations attended by more or less intense itching. They may be few or many; appear and disappear suddenly; be irregular in shape, the size of a pea, bean, or even egg, or extend lengthwise, and the eruption be repeated for days or months. Many times drawing the finger-nail or a pencil over the spot where the wheals have been, will produce a white line which becomes elevated and red, and shortly disappears. The eruption may occur anywhere, but generally on covered parts of the body. The cause is most frequently some digestive disturbance, the irritation of indigested food or the absorption of toxins. The following foods may produce hives: lobsters, crabs, mussels, cheese, sausage, pork, nuts, strawberries, oat-meal, mushrooms; also such drugs as quinine, copaiba, cubebs, chloral, the coal tar products, or salicylic acid.

Arsenicum.—Scarlet elevations, especially on the face and neck, the size of a half dollar; intense burning; intolerable itching, better from external heat, worse from cold and scratching; irritability of the stomach.

Apis Mel.—Sudden appearance of long, pinkish-white blotches, raised above the skin, stinging and burning; also sudden stinging sensation over whole body, passing off after sleep; all symptoms aggravated by heat, ameliorated by cold water. The arms, feet, nape of neck and palm of hands are favorite locations with this remedy, which is also especially indicated in acute cases.

Urtica Urens.—Nettle rash preceding or accompanying rheumatism; itching swellings all over the fingers; intense burning; raised red blotches, or fine stinging points, or a pale rash provoking constant rubbing, disappearing at night and reappearing in the morning; especially after eating shell-fish; may appear each year about the same time.

Calcarea Carb.—Chronic cases; white, elevated hard eruption disappearing in the cold air, or elevated red stripes on the skin, itching and burning intensely after rubbing. In children inclined to grow fat or during dentition.

Also *Pulsatilla* when the hives are of gastric or uterine origin; after eating fat pork, fruits, buckwheat cakes, pastry, etc.; burning, itching rash, worse from warmth. *Nux vom.* Nettle rash with headache, vertigo and constipation; after the use of drugs or stimulants. *Rhus tox.* when hives accompany ague or rheumatism, or come on after getting wet in persons subject to rheumatism, itching all over the body. A dose of the indicated remedy every three hours.

First find out the cause and remove it; empty the stomach and bowels of all irritating contents, and regulate diet, exercise, bathing and all other habits. Sleep on a firm mattress, with only light weight bed-clothes, and in a well ventilated room. Wear soft underclothing. Baths medicated with sea-salt, aromatic vinegar, alcohol, cologne, camphor, or boric acid sometimes alleviate the symptoms. One of the most easily prepared effective applications is starch mixed with cold water and boiled until about the thickness of mucilage; while still boiling add one drachm of zinc oxide and two drachms (teaspoonfuls) of glycerine; stir well and let cool, then apply to the affected surface. Warm vinegar and water may allay itching, or cream, one ounce to which one-half drachm of chloroform has been added. After applying a lotion, take up the excess gently with absorbent cotton or gauze, do not rub the spot; after drying, apply talcum or other dusting powder. Isolated spots in mild cases may be painted with flexible collodion.

Shingles.—Herpes Zoster.—*Zona.*

THIS painful disease of the skin due to injury or irritation of the nerves, is characterized by the formation of grouped pin-head to pea-sized vesicles or watery pimples, along the course of a nerve, preceded, accompanied or followed by neuralgic pains in the part affected. A marked feature is that the eruption is almost invariably confined to one side of the body. It often forms a semi-girdle about the chest or abdomen, thus obtaining the name of Zona, but may follow the course of a superficial nerve on any part of the body. Sensitiveness of the skin, or pain, and slight fever generally precedes the appearance of the vesicles which attain maturity in from three to seven days, then dry up, form crusts, and scale off; one group may be followed by another. The disease may last from ten days to three weeks, and rarely occurs but once in a lifetime. It is serious only in the aged, and in the greatly debilitated. The chief causes are exposure to cold, damp weather; injury to some nerve, certain poisons, and diseases. In some cases it is now thought to be an infectious disease.

Arsenicum.—Tendency of the vesicles to run together, with intense burning of the blisters; worse after midnight and from cold applications; in persons much debilitated, not well nourished, as feeble, old people.

Before using Homeopathic Medicines read pages 681 to 684.

Strychnia.—Much prostration; great sensitiveness and soreness of the skin, with severe neuralgic pains; headache; lack of appetite.

Rhus Tox.—Small burning vesicles, with redness of the skin; rheumatic pains during rest; symptoms worse in cold weather; shingles brought on by getting wet when overheated.

Graphites.—Zoster on the left side; large blisters from the spine round to the naval, burning when touched; worse indoors, better in the open air; in fair individuals, rather stout, and having a dry skin.

Consult the remedies mentioned under "Nettle Rash" and "Neuralgia." Give a dose of the indicated remedy every three or four hours. It is desirable to keep the vesicles unbroken, and to this end they may be painted with collodion containing ichthyol, one drachm of the latter to one ounce of the former; or one-half ounce of collodion containing two grains of morphia sulph., when the pains are severe. Ordinary dusting powders of starch, talcum, or oxide of zinc make a good dry dressing, the surface being covered with absorbent cotton filled with the powder, and kept in place by a light bandage. Galvanism is often highly beneficial for neuralgic pains persisting after the eruption has disappeared.

Eczema.—Salt Rheum.—*Tetter.*

Eczema is a non-contagious, inflammatory disease of the skin occurring in many different forms, the commonest of which are described on page 166. That occurring on the face of infants is frequently called "milk crust." Chronic eczema is known as "salt rheum." The causes of eczema are both internal and external, and include indigestion, constipation, general debility, rheumatism, diseases of the kidneys, scrofula, teething, diseases of the uterus, the use of soaps containing too much alkali, irritation of the skin by chemicals, friction, scratching or parasites, over-feeding, especially in children, unhygienic surroundings. To learn the cause should be to endeavor to remove it. Eczema may coexist with any other skin affection, or be the expression of some disease of an organ or the whole system which must first be cured.

Rhus Tox.—Redness of the skin, quickly followed by the formation of vesicles, the watery contents changing to pus; the skin is often puffy; burning and itching worse at night and in cold weather.

Mezereum.—Scrofulous cases, in which hard, thick crusts form, crack and ooze pus; pimples often form about the part mainly affected.

Arsenicum.—Red or white pus-filled pimples, or painful and black, with burning and itching on the scalp, forehead, cheeks, arms, shoulders and upper part of the chest; thick crusts form which have well-marked scars.

Natrum Mur.—Cracks and fissures of the lips, chapping of the lips; fever blisters; cold-sores; chapped hands, skin rough and dry. In the very beginning of a cold-sore apply camphor or pure alcohol.

Mercurius.—Eczema with suppuration, the pustules run together and discharge an acrid humor, or remain sore, bleed easily and are painful to the touch; itching and burning worse in bed; the sufferer sweats easily.

Sulphur.—Dry, thick yellowish scabs all over the body, especially on the scalp; painful to touch; great itching; aversion to washing.

Calcarea Carb.—Heat, thirst and loss of appetite accompany the eruption which is often on the head, and extends to the face; white, chalky-looking crusts; especially in scrofulous children.

Also *Sepia,* with itching pimples on the chin; eczema of fingers with the formation of little ulcers. *Silicea,* pimples filled with pus all over the body, do not suppurate or dry up, sensitive to touch; chronic eczema in persons subject to eruptions and swelling of the glands. A dose of the indicated remedy may be given every three or four hours.

Much attention must be paid to the general condition. Omit from the diet sugar, cake, pastries, fried food, cheese, shell-fish, salt fish or meats, pickles, nuts, tomatoes, rhubarb, and all stimulants. Cod liver oil is well adapted to scrofulous or debilitated individuals, also a good preparation of iron. A liberal, wholesome diet, including cream, butter and other fats is necessary, and the drinking of at least three pints of water a day. Alkaline mineral waters are recommended. Exercise especially of the muscles of the arm and trunk should be systematically taken. Let "blood purifiers" alone; they frequently aggravate the trouble. Soap and water is harmful in most cases of acute (recent) eczema, and rubbing and scratching will undo all the good remedies and applications can effect. Protect the parts from all irritation, and keep as quiet as possible. When water must be used, soften it with borax, bran or soda. Olive oil, to which has been added one per cent. of carbolic acid, may be applied to soften crusts, but dressings soaked with oil should not be kept on many hours at one time lest the skin be weakened and macerated. When there is no discharge a very fine dusting powder such as zinc, talcum, starch, rice-flour, or lycopodium may be applied. A good lotion which may be applied, and the skin then gently dried before using a powder, is prepared by combining two scruples of carbolic acid, one drachm of oxide of zinc and two drachms of glycerine with enough limewater to make one-half pint in all. Tar or zinc ointment will be found helpful in many cases of chronic eczema.

Before using Homeopathic Medicines read pages 681 to 684.

Small Pox.—*Variola.*

It is not uncommon for those living far away from towns and cities to be obliged to care for cases of smallpox. The disease is well described in earlier pages of this book. Vaccination is the surest preventive known and should be immediately repeated when a person has been exposed to infection, even although previous inoculation has given satisfactory results.

Tartar Emet.—The leading remedy: it reduces the fever, and the pustules run their normal course; is also useful when there are lung or stomach complications. Given early it mitigates the severity of the disease.

Belladonna.—High fever; severe local symptoms; throbbing of the arteries in the neck; eyes bloodshot; aversion to light; sore throat; pain in the back; difficulty in getting any sleep, or in passing urine.

Mercurius Viv.—When the eruption contains pus; tongue moist and swollen; throat ulcerated; breath foul; great thirst and flow of saliva; diarrhœa.

Arsenicum.—Bad cases; great prostration with tendency to hemorrhages; eruption dark; skin blue, small, frequent pulse; thirst; burning heat; great restlessness.

Rhus Tox.—When the eruption is watery, and runs together; burning and itching; or when patient has many of symptoms like typhoid fever (which see) and is much exhausted.

Also *Sulphur* when the eruption is drying up. *Bryonia* when the eruption is delayed or suddenly disappears. *Phosphorus.* Bloody pustules, hard, dry, exhausting cough, with pain, or rawness in chest; bronchitis; bleeding from the lungs; frequent faintings. A dose of the indicated remedy every one or two hours.

While the general treatment is quite fully given on page 160, it may be said by way of emphasis that the patient should be strictly isolated and quarantined, in a darkened, well-ventilated room; should be often sponged with alcohol or tepid water; gargles (see "Inflammation of the Larynx") used for sore throat, and the face anointed, after careful cleansing, with fresh lard and charcoal, vaseline, almond oil or sweet cream to prevent pitting. The pustules should not be broken or irritated.

A new method of treatment, the Finsen red light treatment, has proved successful in several cases, and consists chiefly in placing the patient in a room to which no light is admitted that is not first filtered through red glass or other material that will effectively shut out the chemically active rays of light. Treatment should be begun at the earliest possible moment, and is said to prevent suppuration and scarring.

Diseases of the Digestive Organs.—*Toothache.*

Plantago.—Great sensitiveness of the teeth, and feeling of elongation; pain worse from cold air or contact; neuralgic form. A dose every ten minutes, if necessary.

Chamomilla.—Toothache from a draught, suppressed perspiration, or mental emotions, jerking, shooting, tearing, intolerable pains, affecting the whole side of the face; worse after eating, from warmth, and at night; especially in children. A dose every fifteen minutes to an hour.

Mercurius Viv.—Decayed teeth, with tearing pains extending to the glands and ears; worse from cold food or drink; cool, damp air, or the warmth of the bed. A dose every one or two hours.

Belladonna.—Drawing, cutting, or *shooting* pains in the teeth, face and ears; worse at night, in the open air, or when lying down. A dose every fifteen minutes to one or two hours.

Pulsatilla.—Throbbing or digging pains, extending from the decayed tooth to the eye; worse at night, in a warm room, from warm drinks or food. Better in cold air and from cold drinks. Toothache, especially in quiet, sensitive women.

Decayed teeth should be filled at once, whether belonging to the permanent set or not. A pledget of cotton wet with plantago or creosote may be placed in a cavity to relieve pain.

Inflammation of the Tongue.

INFLAMMATION of the tongue begin swith great congestion, redness and swelling. The tongue may protrude beyond the teeth, and is tender and painful; a grayish-white secretion forms on the surface; the tongue becomes dry, cracked and ulcerated; chewing and swallowing are difficult. Burning the tongue, chemicals or the bites or stings of insects may cause this affection. The disease may be acute or chronic.

Belladonna.—Tongue red, smooth, slimy with intense heat, pain and swelling. Later on give *Mercurius sol.* if the tongue is covered with a slimy coating, and is swollen and flabby, with much watering of the mouth. *Hepar sulph.* when suppuration occurs, with sharp, splinter-like pains.

Arsenicum.—Tongue dry, burning, cracked and ulcerated, especially if the inflammation is chronic. A dose of the indicated remedy may be given every two hours in acute cases; three times a day, in chronic.

Rinse the mouth frequently with some mild antiseptic, listerine or glycothymoline, one to four. Ice in the mouth is generally grateful. The diet should be liquid, and nourishment should be given by rectal injections if necessary.

Stomatitis.—*Canker and Thrush.*

There are many kinds of inflammation of the mouth, the simple, the aphthous, where little ulcerated patches form; the putrid, which is even more severe than the aphthous, and affects the gums causing them to shrink, ulcerate, and recede from the teeth; the parasitic, called thrush, and caused by a parasitic plant or fungus; the gangrenous or cankerous, causing sloughing in bad cases.

Canker generally appears first, as little, hard sore spots on the inner surface of the lips, cheeks, or gums; these may ulcerate, and when on the cheek it may be perforated in from three days to a week. Severe cases often result in death. Canker occurs most frequently in feeble, sickly children, but may affect adults.

Borax.—Irritable stomach; mucous membrane of mouth shrivelled; red blisters on the tongue; may be easily bleeding, ulcerated patches; thirst; sometimes vomiting.

Mercurius Sol.—Ulcerative sore mouth; gums ulcerated and bleed; foul breath; watering of mouth; tongue swollen, and shows prints of the teeth which may be loose.

Sulphuric Acid.—Mouth very sore; recurrence or extension of sore spots or ulcers; watery, greenish diarrhœa.

Arsenicum.—Great debility and prostration; mouth reddish blue tongue red and blistered; bad breath; gums swollen and bleeding; emaciation; disease resists treatment.

Also *Sulphur*. Blisters on the tongue and in the mouth; great dryness; feeling of heat and burning; irritable stomach; diarrhœa. *Kali chlor.* Mucous membrane of the mouth red and swollen; grayish ulcers, foul breath; tough, stringy saliva. A dose of the indicated remedy every three or four hours.

In simple catarrhal inflammation of the mouth or where there are ulcerative patches, washing the mouth frequently with ten grains of boric acid to an ounce of water is recommended. For the curdy spots in thrush which can be brushed off, but which rapidly reform, use a wash of bicarbonate of soda, one drachm to one ounce of water. A baby's mouth should be washed before and after nursing; plain boiled water may be used, or the above named wash. When there is extensive ulceration with great foulness use one part peroxide of hydrogen to ten parts water. Another excellent mouth wash consists of three grains of potassium chlorate to an ounce of water. Absolute cleanliness; light, nourishing food; pure air; sunshine; warm, but not excessive clothing are absolutely essential, also hygienic surroundings. Persistent ulcerative spots or ulcers may have to be cauterized with nitric acid.

Pharyngitis.

BETWEEN the back of the mouth and the esophagus, or canal leading to the stomach, is the portion of the throat called the pharynx. This is liable to the same inflammatory conditions from cold or extension of disease from nearby parts. There is chilliness, dryness and soreness of the throat, with constant desire to clear it, and the tonsils and palate may be swollen. Cough, swelling, and tenderness of the muscles of the neck may occur, and although an acute attack may pass off in two or three days, the condition may assume a chronic form. Consult the remedies under "Sore Throat." The first three will be called for in the order there given. The other remedies are equally valuable when called for.

Also *Capsicum.* Chilliness down the back; the palate feels longer than it should; the throat sore, smarting and biting. *Gelsemium.* The back of the mouth dry, irritated and burning; the tonsils inflamed; burning in the esophagus. *Hepar sulph.* The throat feels scraped, and as if a fish bone had stuck in it. *Argentum nit.* Chronic pharyngitis; palate and back of the throat dark red; much thick, tenacious mucus, which has to be hawked up, rawness and scraping in the throat. *Nux vom.* Throat raw, sore, rough as if scraped, in the morning, when swallowing, or on inhaling cold air; voice hoarse; has to clear the throat constantly, especially in the morning; indigestion or disorders of the liver.

A dose of the indicated remedy every one or two hours in acute cases; three times a day in chronic cases. The observance of hygienic laws is essential. Local treatment will be found under "Sore Throat."

Hiccough.—*Singultus.*

HICCOUGH may accompany serious diseases, such as inflammation of the kidneys, liver or stomach. Generally, however, it is but a symptom of indigestion from improper food, or a spasmodic manifestation of simple nervousness or hysteria.

In ordinary acute cases due to indigestion, give *Nux vom.*, a dose every fifteen minutes. *Moschus* or *Ignatia* in hiccough accompanying hysteria. *Arsenicum.* Hiccough after eating, and in malarial cases hiccough instead of fever at the hour fever should appear. *Pulsatilla.* Hiccough when smoking, or after eating rich or fat foods.

Holding the breath sometimes gives temporary relief, sipping water, or taking a little sugar or lemon juice.

Dyspepsia.—*Indigestion.*

THE causes and symptoms of dyspepsia are described at length in the first part of this book. It should be especially noted in this connection that indigestion may be of nervous origin, or due to an inflammation of the lining membrane of the stomach, gastritis. So far as possible find and remove the cause, and select the remedy in accordance with the general condition of the patient, and not from the stomach symptoms alone.

Headache is often of sympathetic origin, and due to indigestion, so also is pain and palpitation of the heart, heartburn or waterbrash, dizziness and blurred vision.

Nux Vom.—Distress in the stomach, coming on an hour or so after meals; sour, or bitter taste in the mouth; flatulence; distention of stomach; hiccough; sour risings; heartburn; nausea; sometimes vomiting; palpitation of the heart. Indigestion, especially in dark-haired, nervous, energetic, irascible persons, and those of sedentary occupations, with tendency to constipation or piles, also after using patent medicines, cough syrups, etc.; nervous dyspepsia. A dose three times a day.

Sulphur.—Follows *Nux* well, especially in chronic cases, with constipation and piles; canine hunger, flatulence, and desire for sweets. A dose morning and night.

Bryonia.—Indigestion, in warm and wet weather, and in bilious and rheumatic persons, with constipation; bitter taste and bitter or sour risings; nausea, or bilious vomiting. A dose every four hours.

Pulsatilla.—Indigestion from pork, pastry, ice-cream or ice-water, with sour risings; heartburn; furred, white tongue; nausea and flatulence, especially in lymphatic persons with fair hair and complexion and easy disposition. Indigestion from exposure to wet or cold. A dose every four hours.

Arsenicum.—Burning pains with anguish; painful distention of the stomach; nausea or vomiting excited by eating or drinking; very thirsty but can drink but little at a time; water seems to disagree; rapid prostration. A good remedy after the excessive use of ice-water or tobacco. A dose every three hours.

Antimonium Crud.—Tongue heavily coated white; catarrh of the stomach; loathing of food, constant nausea and tendency to vomit. Indigestion from overloading the stomach with fats, sweet things, sour wines, etc. Give as above.

Lycopodium.—Great flatulence; excessive hunger, but a small quantity of food fills the patient up; sour taste in mouth, and sour eructations. Indigestion after eating starchy foods, and chronic cases with liver troubles or gout. Give as above.

Carbo Veg.—When *Nux vom.* has not given relief, and after the abuse of rich food or stimulants; great flatulence; aversion to meat, fat foods and milk; acrid risings; heartburn; sensitiveness and burning in the stomach. Indigestion from salt or spoiled meat or fish. Give as above.

Also *Ignatia* when indigestion follows grief, hysteria or great nervousness; weak, empty, sinking feeling in stomach; frequent sighing, and melancholy. *Ipecac.* Tongue clean, constant nausea and inclination to vomit; after ice-cold food or drinks, pastry, pork. *Cinchona.* Indigestion, following loss of blood, exhausting diarrhœa, or from malarial influences, with fullness and distention of stomach, flatulence, and drowsiness after eating. A dose three times a day.

The general advice given in the corresponding section in the first part of the book is very good. In acute attacks always empty the stomach of irritating substances by provoking vomiting, as with tepid water or tickling the throat with a feather. Then give it rest, especially if there is vomiting. White of egg, Vichy and milk, and light gruels are generally borne best in acute cases. All errors of diet, constipation and mode of living must be rectified. Consult the sections on "Constipation" and "Headache."

Bleeding from the Stomach.

Blood from the stomach is generally dark, often clotted, and frequently mixed with food. It may be vomited or spit up in ulcer or cancer of the stomach; be due to injuries, or many diseases such as typhoid fever, smallpox, yellow fever, scarlet fever or diphtheria. It may also first have been swallowed from the nose or throat.

Ipecac.—Sudden attacks, with pale face; nausea; vomiting of blood; great faintness; oppressed breathing; feeble pulse. A dose every fifteen minutes.

Hamamelis.—Thin, dark blood; fulness and gurgling in the abdomen; patient tremulous, weak, and cold; quick pulse; profuse perspiration. Give as above.

Also *Arsenicum* in recurring bleeding from the stomach when the patient has an ulcer or cancer; constant nausea and retching; great thirst for water often and in small quantities; quick, thread-like pulse; much anxiety. A dose three times a day between attacks.

Turpentine, the first solution, in drop doses on sugar is highly recommended in bleeding from the stomach due to injuries. *Arnica* may be given in these cases if turpentine is not available or effective. *Phosphorus.* Bleeding from the stomach; blood with mucus, black or like coffee grounds; persons who bleed easily.

Bits of ice may be swallowed; the patient should remain in bed, and the room be kept quiet; an ice bag may be applied to the spine, and ice cold compresses to the stomach; nourishment must be given by rectal injections only.

Nausea and Vomiting.—*Sea-Sickness.*

Nausea and vomiting are symptoms of some derangement of the stomach or of disease elsewhere in the body, and also may occur during pregnancy. Consult the section on "Indigestion," where will be found the indications for the application of *Nux vom.*, *Pulsatilla*, *Bryonia*, *Ipecac*, and *Arsenicum.*

With the nausea and vomiting of sea-sickness and car-sickness nearly everyone is familiar. While there may be no cure for sea-sickness always to be depended upon, the writer is confident much may be done to prevent and mitigate this affliction, for such it is to most travellers.

Nux Vom.—A dose three times a day, several days before sailing.

Cocculus, 6 x.—Great nausea, vomiting, or inability to vomit; faintness, giddiness, palpitation of the heart; sea-sickness, especially from passive motion of the vessel, as when there is a swell on. A dose every hour or two; should follow *nux.*

Also *Ipecac.* Persistent nausea with frequent, free, copious vomiting. *Apomorphia*, 3 x. Ordinary sea-sickness, with vomiting whenever the head is raised.

Let the sufferer stay on deck, have plenty of warm wraps and a hot water bottle; persist in eating but do not take soups or gruel; coarse, simple, solid food, little and often, is by far the best; coarse, stale graham bread and an underdone chop, or rare steak and pilot bread are suggested. Strong, boiling hot tea without milk or sugar, or coffee may be taken, or iced champagne. It is well to drink a cup of tea and eat a cracker before leaving one's berth in the morning. A strip of flannel pinned tightly about the abdomen gives a feeling of comfort and support.

Looseness of the Bowels.—*Diarrhœa.*

The very old and the very young are most liable to attacks of diarrhœa. Its causes are for the most part avoidable; improper or too much food, exposure to cold, wet or dampness, as sitting on the cold ground; cold drinks or ices taken when heated; tainted foods; impure drinking water; excessive emotion. Other causes are sudden changes in temperature; exposure to sewer gas or working among chemicals; the retention of irritating substances in the intestines. The symptoms are familiar to all, and are mentioned under the remedies.

Aconite.—After cold or damp, or checked perspiration, frequent, scanty, loose, green stools with straining; fever, and restlessness. *Ferrum phos.* instead when fever and restlessness are slight, and diarrhœa follows checked perspiration.

Podophyllum.—Early morning diarrhœa, frequent, painless, profuse, yellow, watery stools, preceded by retching and vomiting; protrusion of rectum during stool; also diarrhœa during teething. A dose every two hours.

Aloes.—Involuntary, bloody, jelly-like, mucous stools, preceded by pain and rumbling in bowels; morning diarrhœa, followed by great weakness. A dose every two hours.

Mercurius Cor.—Stools slimy, bloody or black, with great urging and straining—a "never get done" feeling; cutting, pinching pains; colic before stool. A dose every hour.

Chamomilla.—Very useful for children, especially during teething and from taking cold; green, watery stools smelling like rotten eggs, with colic.

Sulphur.—Diarrhœa some hours after midnight, or driving patient out of bed *early in the morning;* pappy, greenish-yellow, fetid, slimy stools.

Caprum Ars.—Crampy, collicky pains; restless tossing; straining of the rectum and bladder; violent, greenish or grayish stools.

Veratrum Alb.—Violent, painful, watery, copious discharges, with profuse perspiration, followed by great prostration.

Gelsemium.—Diarrhœa in nervous subjects, excited by depressing emotions or "stage fright."

China.—Painless, watery, sour diarrhœa, or stools containing undigested food; evacuations mostly at night; pinching colic; also when there is great exhaustion following diarrhœa.

Arsenicum.—Small, watery, foul, mucous or bloody discharges, with much burning in the rectum; rapid exhaustion; thirst; restlessness.

Also *Colocynth.* Diarrhœa with severe colic, relieved by bending double. *Bryonia.* Diarrhœa in *hot weather;* brown, thin stools, worse in the morning on moving about. *Ipecac.* Greenish, mucous, *yeasty* stools, with colic and *constant nausea.*

A dose of the indicated remedy every one or two hours. Perfect rest in bed is essential in acute cases; no food for twelve hours, then only barley water; arrowroot, flour or rice gruel, later mutton broth, thickened with rice or cracker crumbs; the return to the usual must be gradual. A hot-water bag to the abdomen is grateful.

Chronic Diarrhœa.

CHRONIC diarrhœa may follow an acute attack, accompany other diseases, or develop in camps, prisons, etc. from bad hygiene, exposure, fatigue and improper food. In the beginning the sufferer may seem in fair health, but very slight causes excite looseness of the bowels; diarrhœa may alternate with constipation. The size of the stools is frequently indicative of the extent and severity of the disease, usually the amount is from two to four ounces.

Before using Homeopathic Medicines read pages 681 to 684.

The indications given for *Mercurius cor.* and *Arsenicum* under "Looseness of the Bowels" should be read. Pus, blood and much mucus may be present in the stools when the former remedy is called for. Under *Arsenicum* in chronic cases there is little or no straining, the stools are frequent and variable in character, and worse after food and exercise; great prostration and emaciation. *China* follows this remedy well. *Aloes* is serviceable with yellow stools passed unintentionally when making water or emitting gas; slight colicky pains; dull headache in forehead. *Sulphur.* Early morning diarrhœa with excessive emaciation and prostration. *Calcarea carb.* Chronic diarrhœa in scrofulous persons, or fat, plump children, with clay-colored, sour, undigested stools; head sweats during sleep. Any of the remedies mentioned under "Looseness of the Bowels" may be required for cases with corresponding symptoms. A dose of the indicated remedy may be given three times a day.

The cause of the trouble must be sought, and removed if possible. Even in mild cases as much rest as possible should be taken, especially before and after meals; fruits and vegetables must be omitted from the diet as a rule; milk, plàin, peptonized or malted is excellent; warm baths and cold sponge baths are beneficial and necessary; gentle friction and massage of the extremities tend to lessen congestion of internal organs.

Dysentery.

DYSENTERY is often a serious affection and may be fatal. Its chief characteristic symptoms are griping pains in the abdomen, followed by scanty stools of mucus and blood, accompanied by much straining and often ineffectual urging to stool. An extended description of the disease in both its acute and chronic form, is given in the early part of this book. Dysentery is probably a germ disease and, in many cases, capable of being transmitted from one person to another. The causes mentioned under "Looseness of the Bowels" favor the development of dysentery; it is also very common in hot climates. Mild, catarrhal or mucous cases last from five to ten days; more severe ones from three to four weeks; the epidemic, tropical form may result fatally or merge into the chronic form, or recovery be slow and tedious.

Mercurius Cor.—Stools frequent, slimy, scanty, composed of offensive mucus tinged with blood, or containing shreddy matter like the scrapings of hog's intestines, with severe, cutting, griping, abdominal pains, persistent urging to stool, and straining; flabby, coated tongue; burning and urging in the bladder and rectum.

Arsenicum.—Severe cases, with much exhaustion; stools of thick, dark green mucus, or dark, bloody, watery; very offensive; burning pain in the rectum, which is sore and raw; feeble pulse; great thirst, but for only a little water at a time.

Belladonna.—Violent fever; retention of urine; nausea; vomiting; scanty, bloody, slimy stools, with urging and straining; spasmodic, clutching pains; marked stomach symptoms; abdomen distended, hot and painful.

Cantharis.—Blood streaked, mucous stools like *scrapings of the bowels;* cutting and burning in anus; straining in bladder as well as in bowels.

Aloes.—Loud gurgling in abdomen; fullness and weight before stool, faintness after stool; bloody, *jelly-like* mucous discharges.

Colchicum.—Dysentery in the autumn; transparent, jelly-like mucus or bloody mucus containing white particles; griping colic before stool with much urging; pain better after a movement; great prostration; aversion to the smell of food.

Nux Vom.—Violent urging; pressing pain in the back and loins, the back feels broken; great heat and thirst, with red face; the pains and urging cease with the evacuation. After the abuse of diarrhœa mixtures.

Also **Ipecac.** Green, frothy, mucous stools; violent colic and urging; loathing of food; nausea and vomiting. *Capsicum.* Frequent, mucous stools mingled with dark blood; cutting colic; drawing pains in the back; great thirst, but after every drink shivering. *Nitric acid.* Chronic dysentery, especially when the bowels are ulcerated and there is pus in the discharges; green or bloody mucous stools, very foul; much urging during stool and exhaustion afterwards. *Sulphur.* Chronic, obstinate cases, slimy, blood-streaked stools; worse in the early morning. A dose of the indicated remedy every hour or two in acute cases, and three times a day in chronic.

Absolute rest in bed in a sunny, well-ventilated room is of the greatest importance; the patient should use a bed pan containing a little disinfectant, and the evacuations should be disinfected before being emptied out. For the urging and straining the intestines may be flushed out with a four-quart injection of hot water, temperature about 110 °, using a fountain, not a bulb syringe, and letting the water run in gently, or give a rectal injection of two or three ounces of boiled starch to which ten to twenty drops of laudanum have been added. Hot sponge baths are soothing, also a flannel binder about the abdomen, or hot fomentations to the abdomen, or a partly filled hot water bag. The nourishment may be the white of egg; hot milk, plain, peptonized or malted; hot, thin gruels of rice, arrowroot, cornstarch; soda water and milk or barley water may be given, and in some chronic cases beef juice may be well borne or scraped raw beef.

Cholera Morbus.

In cholera morbus there is moderate diarrhœa; nausea with abdominal pains; and gas in the stomach and bowels; or the attack comes on suddenly with colicky pains, vomiting, diarrhœa, with frequent and copious evacuations, and, in severe cases, great prostration; cold, clammy sweat; voice husky; blueness of the skin, and pulse small and feeble. Response to the indicated remedy is generally prompt. Consult the section on "Asiatic Cholera" for the indications for *Veratrum alb.*, *Camphor*, and *Arsenicum*. *Cuprum* may be needed in severe cases. Also *Podophyllum*, when the vomiting and pain are not severe, or are entirely absent, and the stools are profuse, watery, yellow, and of an offensive odor. *Ipecac.* The milder class of cases, with green discharges, and the nausea and vomiting much more severe than the other symptoms. A dose of the indicated remedy every fifteen minutes to one hour.

Liquid diet and rest in bed during the acute attack; large, hot rectal injections three or four times a day with a fountain syringe; cold drinks in small quantities only; hot applications to the abdomen. or a hot bath.

Preventive measures include avoidance of unripe or overripe fruit, of stimulants or large quantities of ice water, getting in a draught. When over-heated, sitting on damp ground. Wear a flannel binder about the abdomen if subject to bowel troubles.

Cramps or Neuralgia of the Stomach.—*Gastrodynia.*

THE symptoms of this affection are intense, griping, agonizing pain in the stomach usually extending to the back, with belching of gas, faintness, and intermittent pulse. Pressure on the stomach is well borne. The attack lasts from a few minutes to half an hour or more. Sometimes the paroxysms subside very slowly. True neuralgia of the stomach is of nervous origin.

Nux Vom.—Persons of sedentary habits suffering from overwork, constipation, irregular eating, excesses in tobacco, alcohol, tea or coffee; griping, clawing pains especially in the morning.

Fowler's Solution.—One to three drop doses three times a day, for burning neuralgic pains of the stomach, radiating in different directions, and occurring in debilitated persons with impoverished blood.

Argentum Nit.—Gnawing pains which come on and depart slowly, especially in weak, emotional delicate women; pain much worse from eating; pressure and bending double gives some relief; indigestion between the attacks.

Cuprum Ars.—Severe, tormenting contracting pains in and about the stomach; loss of appetite; hiccough; nausea, especially in those suffering from nervous dyspepsia. Give as early in the attack as possible.

Also *Belladonna* for attacks appearing and passing off suddenly, pressing, drawing, cutting, wrenching pains in the stomach, causing patient to bend backward and hold his breath; periodical attacks, with trembling, especially at night.

Take a dose of the indicated remedy every ten or fifteen minutes during the attack, and three times a day in the intervals. Apply over the stomach during pain, flannel wet with chloroform and alcohol, equal parts. In very acute and distressing attacks, ten drop doses of *Chloroform* may be taken internally. The bowels should be kept free; simple digestible food taken in small quantities; solid food must be eaten slowly, thoroughly masticated; do not eat when tired; avoid worry and overwork; cheerfulness, change of air and surroundings are important.

Cancer of the Stomach.

CANCER of the stomach is a disease stealthy in its approach, its early symptoms being simply those of indigestion, with great acidity, flatulence, loss of appetite, and foul breath; then the general health is undermined, the sufferer loses flesh and strength; gnawing, burning pains develop, with vomiting after eating or some hours later, depending upon the location of the cancer. As the disease progresses there is bleeding, which darkens the color of the vomited matter, causing the "coffee ground" vomit; the skin becomes earthy and waxy in appearance; the pulse small, weak, and quick, and respiration is quickened; the ankles swell; emaciation increases, also prostration; the tongue is pale and heavily coated. The disease is not common in persons under forty, and runs its course in from two months to two years. Treatment must be directed toward making the patient as comfortable as possible.

Arsenicum.—Frequent vomiting; intense, burning, cutting, shooting pains often accompanied by throbbing.

Conium.—Violent vomiting of "coffee ground" vomit; pressing, burning, stitching or cutting pains in the stomach, extending up through the chest; trembling of the limbs; exhaustion and faintness.

Carbolic Acid, 2 x.—Vomiting, pain and frequent slight hemorrhages; great acidity of the stomach; very foul breath.

Kreosotum.—Nausea and retching, with much saliva in the mouth; everything tastes bitter; burning in the mouth; tongue coated white; face pale or blueish; great prostration.

Also *Nux vom.* for the vomiting of sour mucus; bitter, sour eructations; pressure and fullness in the stomach, with much wind, and gas in the bowels; scraped, raw feeling from the mouth to the stomach. *Kali bich.* where much ropy, glairy mucus is vomited, with burning in the pit of the stomach; tongue coated thick, yellowish-white, or smooth, red and cracked. *Argentum nit.* Violent belchings of gas; vomited matter stains bedding black; violent neuralgic pains in the stomach, with throbbing, and painful swelling.

The sufferer must be made as comfortable as possible, and in the later stages of this disease probably nothing will relieve pain except opium or its derivatives; perhaps morphine is the best form in one-eighth grain doses, combined with five grains each of bicarbonate of soda and subnitrate of bismuth. Nourishment should be given every three hours, predigested liquid foods being borne best as a rule, such as malted or peptonized milk; other foods are allowable if desired; it may be necessary to give nourishment by the rectum. Washing out the stomach is of importance when vomiting is severe, but must be done by a physician. Sipping iced champagne or swallowing small pieces of ice may relieve vomiting. Operation may benefit some cases.

Cancer of the Liver or of the Intestines.

To give a separate section to each of these subjects is unnecessary, because neither physician or layman can treat these cases with any expectation of curing them. A few facts about this dreaded disease are of especial interest, for instance, that cancer of the intestines is very rare, constituting only from four to eight per cent. of all cases of malignant growth, that in the beginning there are no absolutely constant symptoms, even pain may be absent for a long time, or again a vague pain may be persistent and worse at one spot. Constipation and diarrhœa may occur in alternation, and, in the later stages of the disease, the stools contain blood, pus, and a fluid having a very foul, putrid odor. The patient's countenance has the waxy, pinched appearance characteristic of cancer; emaciation takes place, and death ensues in from six months to three years. Often the location of the cancer can be determined on examination.

Cancer of the liver follows in frequency cancer of the uterus and of the stomach, is more common in men than women, and in the latter generally follows cancer of the breast or uterus. A dull, boring pain and tenderness, with enlargement are the most constant symptoms; jaundice occurs in about one-half the cases, but may be slight. Death occurs in from three to fifteen months.

In both cancer of the liver and cancer of the intestines, the remedies given under "Cancer of the Stomach" may be used to relieve the pain and stomach symptoms, especially *Arsenicum*, *Conium*, and *Nux vom.* The diet may be the same recommended in the section referred to, broths and lean meats being also permissible. As the disease progresses some form of opium becomes a necessity, and should not be withheld. Operation in some cases, especially in cancer of the rectum, prolongs life.

Inflammation of the Liver.

THERE are various forms of inflammation of the liver, acute and chronic, from simple congestion to the formation of abscesses. The excessive use of alcohol is the cause of some of the most serious affections. In acute cases there is generally a drawing sensation on the right side in the region of the liver, slight chill, fever; headache, indigestion, even to nausea, and vomiting; jaundice; scanty urine; sometimes hiccough; weakness and loss of flesh.

Aconite.—May be given early when there is a decided chill, followed by high fever, with unbearable, stitching pains in the region of the liver; nervousness, anxiety, and restlessness.

Belladonna.—Early in the attack, with throbbing and oppressive pain in the region of the liver, extending to the shoulders; worse on motion; nausea; retching; vomiting; continued fever; moaning and starting in sleep; congestion of the head.

Nux Vom.—Enlargement and hardening of the liver, shooting, pulsating pains; great tenderness in the region of the liver; feeling of pressure in the abdomen and chest, with short breath; constipation; inflammation from excess of stimulating food or alcohol.

Mercurius Viv.—Fullness over the liver; soreness and swelling; pricking, burning, pressive pains, worse on motion, clay-colored or yellowish-green stools; tongue coated yellow, bad breath; patient cannot lie on right side.

Bryonia.—Acute, sharp, stitching pains, worse by motion; coated tongue, with bitter taste, severe headache and constipation.

Chelidonium.—Chronic congestion, constant pain under the inner angle of the right shoulder blade; sallow skin; yellow-coated tongue; dull headache; constipation; fullness in region of the liver.

Also *Sulphur* in chronic cases, with constipation or early morning diarrhœa; frequent weak, faint spells, with flashes of heat. *Podophyllix.* Feeling of fullness in the right side, with *acute pain in one spot;* much biliousness; diarrhœa; bitter taste; jaundice; protrusion of the membrane about the anus. *Hepar sulph.* when, in abscess of the liver much pus has formed. *Arsenicum* when, in cases of abscess, there is much poisoning of the whole system; great prostration; dry, brown tongue, restlessness, and irritability of the stomach. A dose of the indicated remedy every two hours in acute cases; three times a day in chronic.

The diet must be liquid, especially skimmed milk and milk, while there is fever; hot fomentations or antiphlogistine may be applied to the affected region; an abundance of pure water should be taken. During convalescence eat mostly fruits, fresh vegetables, cereals and milk. If pus forms during inflammation of the liver the abscess should be opened promptly.

Inflammation of the Spleen.

THE spleen, being an associate purificatory organ with the liver, is liable to similar affections. When inflamed, it is manifest by pain in the left side, below the ribs. The same remedies that affect the liver will also affect the spleen. For congestion of the spleen caused by running, immoderate laughter, etc., *China*, a single ordinary dose, will answer.

Jaundice.

JAUNDICE is not a disease but a symptom of disease, calling attention to the fact that there is some interference with the work of the liver, that the bile is not being properly manufactured, or that it cannot flow freely through the bile ducts because of gall stones, swelling of the lining membrane, pressure from growths, etc. Other organs may be diseased, or pregnancy or fever may cause jaundice, also some poisonous substances. The most noticeable condition caused by jaundice is the yellowness of the skin, eyes, tissue and excretions of the body. For a more extended description see page 331.

Mercurius Viv.—Complete jaundice; skin very yellow; thickly coated, flabby tongue; nausea; vomiting; diarrhœa; loathing of food; pain in the region of the liver; urging to stool; scanty, dark-red urine.

Chelidonium.—Yellowness of the eyes and skin; pain in the liver and right shoulder; bitter taste; tongue clean; stool white; urine dark red; distention and pain in the region of the liver.

China.—Malarial jaundice; oppressive headache; liver swollen hard and tender, with spasmodic, stitching pains; capricious appetite or ravenous hunger; dingy, yellow complexion.

Chamomilla.—Jaundice, especially in children; white of the eyes and face yellow; green, watery diarrhœa, with colic; bitter taste and bitter vomiting; also, jaundice following a fit of temper.

Also *Nux vom.* in the beginning if the attack seems due to the use of stimulants or errors of diet; indigestion; constipation. *Aconite.* Fever; stitches in the liver; yellow skin; scanty, dark urine; clay-colored stools; local pain. *Podophyllin.* Enlargement of the liver, with severe pain; scanty, dark-yellow urine; nausea and vertigo; clay-colored stools; especially when there are gall stones.

Hot applications may be made to relieve pain; much water and skimmed milk should be taken; in acute cases a diet mostly of milk, in chronic cases, broths, oysters, fish, vegetables and fruits; a warm bath daily; fresh air at all times. Cheerfulness and amiability assist recovery.

Gall-Stones.

IT is stated that about one-tenth of all persons have gall-stones, but many who have them are never aware of the fact. Gall-stones are formed in the gall bladder from the bile; occur oftener in women than in men, vary in number from one to a thousand or even more, and in size from that of a grain of sand to a hen's egg. Increasing age, high living, irregular habits, a sedentary life, an excess of starches and fats, and whatever retards the flow of the bile favors their formation. When gall-stones pass from the gall bladder in the ducts, and are too large to move freely, they cause a sudden, agonizing, cutting, tearing or shooting pain on the right side of the abdomen, which spreads over the abdomen and to the right chest and shoulder; the muscles of the abdomen are cramped and tender; there is nausea and vomiting; profuse sweat; a small, feeble pulse; cool skin; pale, distorted, anxious face; sometimes even fainting, chills, and convulsions from the excruciating pain. There may be great tenderness over the gall bladder, jaundice, and a temporary rise of temperature to 102 or 104 degrees. The paroxysm lasts from an hour or two to several days, with remissions, ceasing as the stone passes into the intestines.

Berberis.—Violent sticking, digging, tearing pain in the region of the gall bladder. Give at the time of the attack, and also afterward, for pain, soreness, and burning.

Chelidonium.—As an aid to the expulsion of the stones, and to prevent their formation; much jaundice, especially of the forehead, nose, cheeks, and whites of eyes; bitter taste when eating or drinking, tongue coated yellow; pain in the region of the liver, and in right shoulder

China.—One of the most useful remedies to prevent the recurrence of gall-stones and overcome the conditions they have caused. A physician of large experience recommends that six pills be taken twice a day until ten doses have been taken; then six pills every other day, till ten doses are taken; then every third day to the same extent, and so on, until a dose is taken only once a month.

Also *Colocynth* during the attack, for griping, cutting, tearing pains, bending the patient double; feeling in the abdomen as if the intestines were being squeezed between stones. *Nux vom.* between attacks for biliousness and symptoms of indigestion mentioned in the sections on "Dyspepsia," and under "Inflammation of the Liver." Unless otherwise specified, a dose of the indicated remedy every fifteen minutes during a paroxysm, and three times a day between the attacks. Two tablespoonfuls of olive oil to one of glycerine, taken two or three times a day for several days is very helpful in procuring the painless passage of gall-stones. In severe paroxysms of gall-stone colic a few whiffs of chloroform may be given, or morphine in one-eighth grain doses, but the use of the latter should be avoided if possible. Hot fomentations should be applied over the liver or hot baths taken. From two to four quarts of distilled or mineral water should be drunk daily; vegetables and fruit eaten freely; all stimulants and excess of sweet or starchy foods avoided, and much time spent out of doors. Surgical interference is called for when there are repeated and very severe attacks of colic, or a greatly distended gall bladder, with attacks of pain and fever.

Constipation.

The number of persons troubled with constipation is very large, yet it is a difficulty removeable in most cases. Its causes indicate this, the most usual ones being, neglect of nature's calls; overeating; insufficient exercise; drinking too little water; eating improper foods; taking purgatives. Among other causes are weakness of the abdominal muscles from too much fat; the pressure of tumors; derangements of liver; excessive nervousness, debility, or hysteria. Constipation may ultimately cause diarrhœa, ulceration or distention of the bowels, headache and indigestion.

Nux Vom.—Ineffectual urging to stool; irregular and incomplete action of the bowels; headache; nausea; bad taste in the mouth; indigestion; especially serviceable for those who have used stimulants, purgatives, highly spiced food, or who lead a sedentary life.

Bryonia.—Large, hard, dry brown stools, passed with great difficulty; bitter taste in the mouth; tongue heavily coated white; pressure after eating as if from a stone; no urging to stool; irritability; headache; especially in those of a rheumatic tendency.

Sulphur.—Feeling of heat, fullness and discomfort in the rectum, ineffectual urging; stools hard, and accompanied by itching and pressure in the rectum; habitual constipation, especially in scrofulous persons or those having hemorrhoids.

Opium.—Complete inaction of the bowels; stools of dry, hard, round, black balls; headache, dizziness, and drowsiness; constipation from lead poisoning, and during acute diseases.

Hydrastis.—Indigestion; pain in the liver; hard stools coated with mucus; habitual constipation, especially after the continued use of laxatives; gone feeling in the stomach; headache in the forehead; belching of gas.

Lycopodium.—Ineffectual urging to stool, owing to contraction of the rectum, which protrudes during stool; stools hard, and small, with a feeling that much remains; gas in the bowels and rumbling. Also *Collinsonia* when constipation is due to piles, with sharp, sticking pains in the rectum. **Alumina.**—Even the passing of a soft stool requires great straining; stools hard and knotty, like sheep dung, with cutting pains at the entrance of the rectum (anus), followed by blood; constipation from blood poisoning. A dose of the indicated remedy night and morning.

The excessive use of purgatives irritates and inflames the lining membrane of the bowels, and torpor follows the unnatural activity induced by them. If constipated, avoid pastry, white and fresh bread, cake, fried food, cheese, hearty meals, stimulants and much tea or coffee. Eat coarse bread, fresh meats (rare mutton and beef), ripe, juicy fruits and vegetables, stewed prunes, figs, etc. Drink plenty of water, a glassful in the morning before breakfast, and eat an orange then. Keep the skin clean and active: walk, run, ride horseback, play golf and ball; massage the abdomen; wear the clothing loose, and be prompt in answering nature's calls. In obstinate constipation a teaspoonful to a tablespoonful of pure olive oil may be taken by mouth before breakfast.

While the excessive use of mechanical measures to empty the bowels is to be deprecated, the bowels may require a thorough emptying in the beginning, and a small injection of eight ounces of olive oil may be given, followed in an hour by an injection of hot water by means of a fountain syringe, a soft rubber tube being introduced as far as it can easily be passed. Useful laxatives are the mineral waters, such as Carlsbad and Hunyadi.

Piles.—*Hemorrhoids.*

PRESSURE of accumulated fecal matter in constipation interferes with the free flow of blood in the rectum. The veins become distended in little lumps in which the blood partially coagulates. These little lumps are called piles, and may be wholly within the rectum or protrude from it, may be bleeding or "blind" piles; the latter do not bleed. They vary in color, and are often very painful. Indolent habits, luxurious living, sedentary pursuits, the free use of stimulants, patent medicines, cathartics, diseases of the liver and sexual excesses favor the appearance of hemorrhoids.

Æsculus.—Large, *purple, painful piles, like ground nuts,* with itching and burning; dryness, heat, and severe, pricking pain in the rectum; constant aching pain in the back; stools hard and dry; accompanied by protrusion of the rectum.

Nux Vom.—Blind or bleeding piles, from abuse of stimulants, use of highly spiced foods, or sedentary habits; bleeding, burning and protrusion of piles; weight in abdomen; pain in small of back; constipation.

Sulphur.—Blind or bleeding piles, with stinging, burning, and soreness about the anus; protrusion of the rectum; itching and straining, after blood-streaked stools. Can be used following *Nux,* or in alternation, *i. e., Nux* in the morning, *Sulph.* at night.

Collinsonia.—Old, obstinate, blind, or bleeding piles, with a feeling in the rectum as if sand or sticks had lodged there; severe, sticking pains; chronic constipation. Stools lumpy and light colored.

Before using Homeopathic Medicines read pages 681 to 684.

Hamamelis.—Profuse bleeding piles; burning, itching, rawness, and soreness of anus; discharges of dark blood; weakness and pain in back.

Aloes.—Piles, with flow of hot, blackish blood; constant bearing down in the rectum; protrusion of piles which are hot and tender, better from the application of cold water. A dose of the indicated remedy morning and night.

Open air exercise is desirable; avoid the use of coffee, spices, alcohol, tobacco, highly seasoned or rich food, and over-eating; eat vegetables and fruits; drink plenty of water; take cold baths, and sleep on a firm mattress; mental and physical excesses must be avoided; be prompt in attending to nature's calls.

Suppositories of cocoa butter, intended for insertion in the rectum where they slowly dissolve and lubricate and medicate the surface, can be obtained from large pharmacies, especially Boericke & Tafel, Philadelphia, or Otis Clapp & Son, Boston. These suppositories contain hamamelis, æsculus, aloes, hydrastis, or collinsonia, and are to be selected in accordance with the indications given under these remedies. Hydrastis is to be chosen when there is great relaxation of the mucous membrane of the rectum, and copious mucous secretion. A suppository may be inserted at night and in the morning, also after each stool.

Diseases of the Organs of Circulation.

Inflammation of the Membranes of the Heart.

Simple endocarditis or inflammation of the lining membrane of the heart is always associated with some other affection, chiefly with rheumatism. Pain in the region of the fifth rib, sometimes extending down the left arm, a feeling as if the heart were being squeezed, oppressed breathing and palpitation are the commonest symptoms, and when the inflammation is of a malignant form they are all much more pronounced, with increase of temperature, and many symptoms like those accompanying typhoid fever. It is a difficult disease to diagnose, and a layman can only go by the general symptoms.

Pericarditis, or inflammation of the membrane covering the heart, has symptoms similar to those just given, and though the pain is very distressing in some instances, it is often felt more as a sense of uneasiness or oppression. In pericarditis, with secretion of a serous, watery fluid there may be chill, fever, pain, rapid breathing, nausea and vomiting, or sometimes in children, no early local symptoms, but, after a week or two of failing health, slight fever, shortness of breath and increasing pallor, fluid will be found to be present. There is then bulging of the chest, rapid, weak pulse; a dusky, anxious countenance; difficult breathing, and later, if pus forms, there will be erratic chills, sudden rise in temperature; cold sweating; rapid, feeble pulse; diarrhœa; great prostration, and muttering delirium. The physical signs in these diseases are given on pages 314 and 315. Both endocarditis and pericarditis have a chronic, as well as an acute form. If a remedy is well selected in accordance with the majority of the symptoms present, it will act effectually whether the prescriber is able to say whether the case is one of endocarditis or pericarditis.

Aconite.—Acute cases, especially when complicating acute rheumatism; there may or may not be fever; great anxiety; restlessness; pain about the heart extending into left arm, and if rheumatism is present, pain and swelling of the joints.

Spigelia.—Pain and violent action of the heart are its chief characteristics; violent palpitation; severe stitching or stabbing pains; great oppression, the least motion almost producing suffocation; irregular pulse; no effusion.

Veratrum Vir.—Very violent, forcible action of the heart in full blooded, non-rheumatic patients, with full, bounding, but not necessarily a quick pulse.

Colchicum.—Acute rheumatism where there is sudden shifting of the disease to the heart, with severe, tearing pains in the heart; thread-like pulse, small and rapid; great oppression, and difficult breathing.

Bryonia.—Pericarditis complicating pleurisy or pneumonia, and in rheumatic endocarditis with inflammation of the valves causing valvular murmurs; intense headache in forehead or back of head, worse on the slightest motion.

Arsenicum.—In pericarditis, with effusion of fluid; restlessness and anxiety; suffocative attacks; violent and irregular palpitation; cold surface; thirst; fear of death; also in endocarditis when the case is serious, with the above symptoms, and great prostration.

Also *Digitalis* in the later stages of inflammation, with feeble, irregular, fluttering, intermittent or very slow pulse, much worse on changing position; feeling as if the heart stood still; lips blue; great anxiety, but no restlessness. *Belladonna* in the early stage with great congestion; flushed face; bounding pulse; throbbing arteries in the neck, especially in children.

Rest and quiet in bed should be enjoined; the use of flannel blankets instead of cotton sheets; or a light cotton jacket or flannel shirt; a light, nutricious diet without tea or coffee; no stimulants unless heart's action is feeble, then whiskey, brandy or strychnine, 1-100 of a grain; hot, *light* compresses placed above flannel over the heart, an occasional warm bath, temperature 100°; do not let the patient make any exertion.

Before using Homeopathic Medicines read pages 681 to 684.

Hypertrophy and Dilatation of the Heart.

Hypertrophy is an enlargement of the heart by actual increase of the muscular structure causing thickening of the walls of the heart. Dilatation consists of an increase in the size of one or more of the cavities of the heart, with either thickening or thinning of its walls. Both affections are common, and often co-exist. Any condition which prevents the heart from doing its work is a cause of enlargement, as over-exertion, making the heart work too hard; over-excitement; excesses in food or drink; sexual excesses; diseases of the valves; weakening of the heart by poor nutrition, infectious diseases, etc. In hypertrophy, the weight of the heart may be increased from the normal, about nine ounces in men and eight ounces in women, to even forty or fifty ounces, but rarely above twenty ounces.

The symptoms and physical signs are given in the larger section on diseases of the heart, earlier in the book. Attention is called to the fact that the following remedies should be consulted in cases where it is known that there is *valvular* disease of the heart, that is, where the valves do not close properly.

Aconite.—Hypertrophy of the heart with acute attacks of violent palpitation, with great anxiety and restlessness; pulse hard and strong; constriction of the chest, difficult breathing.

Digitalis, 1 x.—Heart's action weak; pulse small, weak, irregular and intermittent; feeling of anxiety about the heart; oppressed breathing as if there was a "want of air"; faint, sinking feeling in the stomach; especially valuable in bad cases where the valves are affected, and there are dropsical symptoms. Five drops several times daily. *Strophanthus* may be used in its place when digitalis does not give satisfactory results, or where it disturbs digestion.

Cactus.—Constriction of the heart as if bound by an iron hand; palpitation of the heart day and night, worse when waking, and when lying on left side, brought on by any excitement; sometimes acute stitching or shooting pains.

Arsenicum Iod.—Suffocative attacks on slight exertion; pain about the heart; weak heart action; rapid, irregular pulse; general weakness, prostration, and restlessness; nervous irritability; especially in chronic cases, with disease of the arteries.

Also *Arnica* in cases due to over-strain and over fatigue. *Rhus tox.* in hypertrophy of the heart, without valvular disease; in rheumatic subjects who have over-exerted themselves. A dose of the indicated remedy every half hour to three or four hours.

The rest treatment is very desirable in these cases, and at least the avoidance of all excitement and worry; no tea, coffee or alcohol, rich or fried foods, or effervescing drinks; avoid an excess of fat, sugar or starch in the diet; eggs, milk, fish, rare beefsteak, chops, well cooked fruit and the lighter vegetables are allowable; do not make any quick movements, as to catch a train; retire early; rest before and after meals; do not over-eat; quiet walking is the best exercise; no active games are permitted; fresh air is essential; keep the bowels and skin active.

The Bad Nauheim or Schott method of treatment is highly recommended.

Palpitation.—Weak Heart.—*Anemia.*

Many times in connection with indigestion, convalescence from long sickness, working or studying too hard, and getting run down, palpitation of the heart or irritable heart will be an annoying condition when there is no change whatever in the heart's structure. At puberty, with impoverished blood, and at the change of life the same condition may be present. Tobacco, alcohol, sexual excesses, and excitement are frequent causes of palpitation. While the treatment is largely hygienic, remedies will greatly aid in restoring the normal tone of the system.

Ferrum.—Bloodless subjects; palpitation, with feeling of oppression about the heart; full, soft pulse; frequent flushings of the face.

Nux Vom.—Palpitation from indigestion; worse after eating; from highly seasoned foods, tea, coffee, tobacco and alcoholic liquors; sedentary habits; too much study or too close application to business. Consult the symptoms under "Dyspepsia."

Glonoine.—Violent palpitation or fluttering; pulsation felt over the entire body; from working before a furnace or being out in the sun.

Also *Aconite* when palpitation is caused by fright or shock, with anguish and anxiety. *Moschus.* Hysterical palpitation. *Ignatia.* Palpitation from grief or suppressed emotion; melancholy; excessive tea-drinking. *China.* After long illness, exhausting diarrhœa or monthly flow; much flatulence. *Spigelia.* Violent, nervous palpitation, with irregular, tremulous action of the heart; oppressed breathing, and sharp, shooting pains. *Coffea.* After great joy or other excitement; sleeplessness. A dose of the indicated remedy every fifteen minutes to two or three hours.

Neuralgia of the Heart.—*Angina Pectoris.*

Breast-pang is a familiar name for this affection which is characterized by paroxysms of intense pain in the heart, under the breast bone, to the left and usually extending into the left shoulder and down the left arm. Frequently angina is associated with some organic disease of the heart or arteries, but often nothing of the kind can be found. True angina occurs more often in men than in women, and after the age of forty. The paroxysms seem to be excited by cold, violent exertion, mental excitement, indigestion, the excessive use of tobacco, and last from a few seconds to two or three minutes or even longer. The pain is excruciating, and accompanied by a horrible sense of suffocation; the face is pale, cold, and clammy, the expression one of agony and terror; the pulse varies, and may be feeb'e and irregular, and death may ensue or the attack pass off with belching of gas or vomiting. Attacks simulating true angina occur in hysterical persons, but the pain is less intense, more diffused, and lasts longer.

Aconite, 1 x.—Attacks following exposure to cold, with intense anxiety, coldness, pain at the heart radiating in every direction, with numbness and tingling.

Arsenicum, 3 x.—When the disease is of purely nervous origin, with debility and prostration, severe suffocative attacks; feeble and irregular pulse. A dose three times a day between the paroxysms.

Spigelia, 2 x.—Violent palpitation; severe stabbing stitches in the region of the heart at every beat; irregular pulse; tendency to faint.

Cactus, 2 x.—Sensation of great constriction, as of an iron band about the heart; irregular action of the heart; palpitation; pain in heart shooting down left arm to the finger tips.

Amyl nitrite perles, containing three to five drops each can be obtained at any large pharmacy, and one may be crushed in one's handkerchief, and the vapor inhaled to relieve the pain, etc., of a severe attack, or the inhalation of oxygen will give relief. In mild attacks frequent doses of the indicated remedy may be given, and its use continued three or four times a day for weeks at a time to improve the constitutional condition. The general health must be improved by all hygienic and dietetic measures. The spinal ice bag applied to the middle of the back for forty minutes, once a day, has proved curative; electricity is beneficial. During an attack the clothing should be loosened, and hot fomentations applied over the heart.

Diseases of the Genito-Urinary Organs.—*Syphilis.*

Inflammation of the Bladder.—*Cystitis.*

CYSTITIS may be either acute or chronic, and, when chronic, usually occurs quite independently of any acute attack, thus differing from other diseases. The cause is infection by a special germ, but certain agencies favor its development, such as exposure to cold or wet, retention of the urine, injuries to the bladder, certain irritating drugs, inflammation of nearby parts, foreign bodies in the bladder, etc., and in women in chronic cases, pressure from a displaced uterus.

"Pain, pus and frequency" are called the three leading symptoms of acute cystitis. This disease is described at length elsewhere in this book, so it may be said briefly that an acute attack may be preceded by chills and fever; that the pain is a constant dull ache or sharp, agonizing pain in the region of the bladder; that pus soon appears in the urine, and that there is frequent urging to pass water, which does not flow freely but only drop by drop.

In chronic cases the pain and urging are not so severe, but still there is frequent and difficult urination for weeks or months, with headache, backache, legache, debility, and loss of flesh.

Aconite.—Chilliness and then much fever; dry, hot skin; full pulse; thirst and restlessness; constant desire to urinate; urine hot, dry, scanty.

Cantharis.—*Burning heat* in bladder; *burning* and *cutting* pains, so severe that the patient screams aloud; constant desire to urinate, with almost ineffectual straining; urine passes in burning drops.

Terebinthina.—Much irritability of the bladder not relieved by cantharis; bloody urine passed drop by drop; sensitiveness over the region of the bladder; slimy, bloody sediment to urine.

Belladonna.—Region of bladder very sensitive; urine hot and red; involuntary dribbling of urine; great nervous irritability.

Apis.—Especially useful in inflammation of the bladder following the use of cantharides, camphor, or other drugs; urine pale straw color, or scanty and red, with brick-dust sediment; pain and burning before and after passing water; much straining.

Mecurius Cor.—Especially in gonorrheal cases or where there is much straining in the rectum as well as in the bladder; sudden, irresistible desire to urinate, and perspiration while passing water; scanty, bloody urine containing white shreds, or dark, flesh-like pieces of mucus.

Chimaphilla.—Useful in both acute and chronic cases, with high-colored, scanty, offensive, turbid urine, containing ropy or bloody mucus; much mucous sediment; great straining before and after urinating, difficulty in beginning to urinate; constipation.

Also *Pulsatilla*, especially in chronic cases in women having catarrhal troubles; frequent, ineffectual urging, with cutting pain and urging; slimy sediment; cystitis after exposure to cold. *Cannabis sativa.* Gonorrheal cystitis with urging every few minutes, and burning and straining worse after urinating; the whole length of the urinary passage burns and smarts. *Boracic acid.* Five grain doses three or four times a day in chronic cases, where there is great desire to urinate, and can not pass a drop, or frequent urination at night as well as in day time, with much smarting afterward. *Nux vom.* Especially in cases occurring in those of sedentary habits, who have indigestion and constipation; painful, ineffectual urging to urinate; urine passes in drops, with tearing pain in the passage; urine pale, and later thick, whitish, or may be reddish, with sediment like brick-dust. A dose of the indicated remedy every hour in acute, and every three hours in chronic cases.

Absolute rest in bed is most desirable and essential, also the free use (three pints or more a day) of distilled or pure spring water, and a glassful of Vichy before each meal; hot sitz baths; hot fomentations over the bladder; washing out of the bladder in chronic cases; a largely milk diet; the avoidance of tea, coffee, alcohol, salty and spiced food, pork, lobster, cheese, beans, fried foods, pastry, and acid fruit.

Sufferers from chronic cystitis should take two to four warm tub baths weekly, besides the daily warm sponge bath, and should wear a flannel band about the abdomen. In women, diseases of the uterus and ovaries must receive proper treatment; vaginal injections of boracic acid and hot water, a dram to the quart, may be taken every other day. A good physician should be consulted so that local treatment of the bladder may be instituted. The bowels must be kept open. Cod liver oil should be taken when there is much debility and loss of flesh.

Retention of Urine and Strangury.

Dr. E. L. Keyes, consulting surgeon to Bellevue Hospital, New York, states that, in his opinion, 95 per cent. of all cases of retention of urine are due to stricture of the urethra (the passage from the bladder through which urine is voided), to contraction of the bladder, or to enlargement of the male gland called the prostate. The effect of retention of urine is congestion of the bladder in its straining efforts to empty itself, and as this condition increases and extends, congestion of the kidneys also, making them extremely susceptible to infection. The treatment must be directed chiefly to removing the cause.

Strangury is the passing of urine drop by drop, with much urging and straining, and may be due to inflammation of the urinary organs or passages, or to obstruction.

Arnica.—Retention of urine from exertion; urine retained, with aching and pressing in bladder; constant ineffectual desire to pass water, or urging, with involuntary dropping of urine; urine dark, scanty, with brick-dust sediment; after wounds.

Belladonna.—Retention of urine, which passes only drop by drop; difficult, scanty urination, with urging pain, and heat along the urethra; paralysis of the bladder muscles.

Hyoscyamus.—Paralysis of the bladder; frequent, scanty, difficult, or involuntary urination; retention of urine.

Veratrum Alb.—Urine not secreted, or if secreted is only partially evacuated, with pain and burning along the urethra; greenish urine.

Consult the remedies given under "Cystitis," especially *Cantharis*, which is a very valuable agent in these cases, and *Aconite* in suppression or retention from exposure to cold. Also *Camphor.* Urine passed drop by drop, with great urging; retention of slow emission of red, thick urine having a musty odor; inflammation caused by the use of cantharides, turpentine, or other drugs; cold extremities. A dose of the indicated remedy every fifteen minutes to one hour.

Refer to the general directions in the section on "Cystitis." Hot baths and applications over the bladder, especially with flannels wrung out in very hot water and a few drops of turpentine sprinkled on them, are indicated. The urine must be withdrawn by catheter if it cannot be passed naturally. The unskilful or careless use of the catheter or any other instrument is a fruitful cause of wounds of the mucous membrane, and subsequent infection by pus germs.

Suppression of Urine.

In suppression of urine, no urine is made by the kidneys. This is a serious symptom and may occur in old people, and in the course of other diseases at almost any age. The remedies mentioned under retention of urine may be consulted, but in all cases the cause of the condition, and all the associated symptoms must be taken into consideration. In suppression from long continued exposure to cold *Aconite* should be given, especially with pressure in the bladder or stitches in the region of the kidneys. *Arsenicum* for suppression in the course of diseases of the kidneys or heart, with poisoning of the whole system from the absorption of waste products, dropsy, and great prostration and exhaustion. *Stramonium.* Suppression during high fever and delirium, neither urine nor fecal matter from the bowels is passed. *Pulsatilla.* Suppression in little girls or in women with uterine disorders, with frequent, ineffectual urging to urinate and cutting pains.

Hot baths, hot applications over the kidneys and bladder, and hot drinks are recommended; give the sufferer large quantities of distilled water or Vichy or Poland water, and injections of hot salt solution into the bowels.

Incontinence of Urine.—*Enuresis.*

Adults as well as children may be subject to this annoyance. Of the causes in children mention has been made under "Wetting the

Bed." In adults incontinence of urine may be due to piles, cracks in the rectum or worms; defective eyesight; paralysis of the bladder from repeated neglect to empty it when full; weakness of the bladder from wounds or uterine troubles, and frequently, great nervousness or a highly neurotic temperament; sexual excesses or unnatural practices may cause irritability of the bladder. For treatment consult the action just referred to.

Blood in the Urine.—*Hematuria.*

Wounds, congestion of the kidneys, Bright's disease, stone in the bladder, smallpox, scurvy, ulcers, and sometimes malaria account for blood in the urine. Blood in the urine may be detected by adding to the urine a drop or two of tincture of guaiacum and two drops of ozonic ether; at the junction of the two fluids a blue line forms, which becomes diffused through the ether. The cause must always be sought, and remedied when possible. Blood in the urine is only a symptom, and all the symptoms and the general condition must be taken into account in selecting a remedy.

Aconite.—Blood in the urine especially in inflammation of the bladder and urethra; scanty, dark, scalding hot urine, passed drop by drop.

Cantharis.—Violent, cutting, pressing, crampy pains in the bladder, extending into the kidneys and urethra; urine passed drop by drop, with burning pain before, during and after urination; urine red or dark colored as if mixed with blood.

Nux Vom.—Blood in the urine after alcoholic excesses, highly seasoned foods, or strong medicines; from indigestion with constipation; suppression of monthly flow; full feeling with pressure in the abdomen, loins, and region of the kidneys.

Terebinthina.—One of the best remedies when this symptom is present; blood mixed with urine, forming a dirty, reddish-brown or blackish fluid, or a coffee-ground-like sediment; burning, drawing pains in the kidneys; pressure in the bladder, extending up into the kidneys when sitting, disappearing when walking about; pressing and straining in the bladder when sitting before urination, passing off when walking; burning in the bladder, worse while passing water.

Also *Arnica* after injuries to the urinary organs. *Arsenicum.* Very painful urination, scanty secretion, burning pain in the urinary organs; bladder seems paralyzed; great anguish and restlessness; bloody urine especially in infectious and septic diseases.

Gravel or Stone.

The composition of the different varieties of urinary deposits is described at length elsewhere in this book. Gravel or stone may form in the kidneys or bladder, and in passing through the tubes from the kidneys to the bladder, or from the bladder to its outlet may cause severe pain and tenderness. When the stone is from the kidneys, the paroxysm of pain is called renal colic; it radiates downward into the groin or bladder, and along the inner side of the thighs. The pain may be so severe as to cause nausea and vomiting; sweat; rapid, feeble pulse and even fainting. There is frequent and painful urination, from reflex irritation. When there is stone in the bladder which passes into the urethra there is frequent urination, with pain and sudden stoppage of the stream of urine. The directly curative treatment of gravel or stone is surgical, and should not be postponed. Remedies will, of course, be resorted to for the alleviation of pain and other symptoms, and especially for the constitutional condition favoring the formation of stone.

Berberis.—Renal colic with sharp, stitching pains, with red sediment in the urine which is dark red or yellow in color, becoming turbid; burning all along the urinary passages; severe pain in the hip.

Lycopodium.—Dull pain, better on passing urine; renal colic, especially of the right side; scanty, high colored urine, smelling like ammonia, with red, sandy deposit, sometimes whitish; itching in the urethra before and after passing urine.

Arsenicum.—Pain in the kidneys with the occasional passage of gravel; scanty urine passed with difficulty; suppression or retention of urine; sometimes blood in the urine.

Sarsaparilla.—Urine passed with difficulty, and containing mucus, pus, gravel and small stones, urine slimy, flaky; clayey or sandy.

Pareira Brava.—Four or five drops of the tincture at the first warning of the attack of renal colic, especially if the attack begins with pain in the genitals, followed by straining in the bladder and rectum; severe pains in the groins extending down the thighs; paroxysms occurring usually from 3 to 6 A..M.; urine smells of ammonia, and is passed with difficulty drop by drop.

Also *Cannabis sat.* Tearing, jerking, stitch-like pains along the urethra, and feeling of soreness; burning while urinating, but especially afterward. *Belladonna.* Spasmodic, cramp-like pains; high-colored urine, with brick-dust sediment; pains come on suddenly and radiate in different directions. *Nux vom.* Renal colic with intense backache, and pains extending into the genital organs, and down the leg. A dose of the indicated remedy every fifteen minutes during an attack; three times a day between paroxysms.

While one of these remedies may give relief in mild cases during an attack, it is chiefly toward correcting the constitutional condition favoring the formation of stone, that they are to be directed. A few whiffs of chloroform or ether will relieve the agonizing pain of a severe paroxysm; hot baths are helpful; a hypodermic of morphine, ⅛ grain, with atropine sulph., 1-20, or suppositories of opium and belladonna may be used.

Free drinking of rain water or distilled water is the best preventive of the formation of gravel or stone; meat should be eaten sparingly; green vegetables, salads and fruits freely; milk is an excellent food, also fish; avoid alcohol, spices, tea, rhubarb, onions, tomatoes, spinach and sorrel. Exercise out of doors is recommended, but must not be excessive; the bowels and pores of the skin must be kept open.

Diabetes Mellitus.

DIABETES may occur apparently alone or associated with affections of the liver, pancreas, nervous system or lungs. Men are attacked about three times as often as women, and the disease is rare under thirty years of age. It is characterized by a copious secretion of urine loaded with sugar, and by a progressive loss of flesh and strength.

The early symptoms are frequent, and excessive urination, great thirst and emaciation, later dry, harsh skin; itching; voracious appetite; constipation; normal or subnormal temperature; impairment of the sexual powers and the eyesight, and there may be drenching sweats; the amount of the urine increases to from four to forty pints. Acute cases last from eight to ten weeks; chronic cases from one to five years, but may continue ten or fifteen. Persons engaged in literary occupations inducing mental fatigue and sedentary habits and members of the "well-to-do" class, or those suffering from gout, syphilis, malaria, and "high living" are especially subject to diabetes.

Phosphoric Acid, 2 x.—This remedy is of the first importance in the treatment, especially in the early stages, of cases of nervous origin resulting from overwork, worry or sexual excesses; rapid loss of flesh; emaciation; much sugar in the urine.

Uranium Nitrate.—Best adapted to cases with marked failure of the digestive functions from the beginning.

Arsenicum.—Great thirst; restlessness; anxiety; debility; oppressed breathing; rapid loss of flesh and strength, waxy look to the skin; and may be eruptions, swelling of the legs, and in the advanced stage, diarrhœa, carbuncles and gangrene; all symptoms worse at night.

Plumbum Iod.—Diabetes especially in gouty individuals, with crystals of uric acid in the urine, and small amounts of albumin; low spirits, anguish and melancholy; dimness of vision; mouth dry; tongue dry and cracked; some fever; skin dry; gangrene.

Also *Nux vom.* for indigestion, with much irritability. *Lactic acid.* Copious and free urination of light colored urine containing sugar; voracious appetite; thirst; nausea; constipation; food sours in the stomach, and much burning, hot gas is raised; skin harsh and dry. *Podophyllum.* Light-colored stools with fullness and soreness in the region of the liver; tongue heavily coated white; head heavy and aches in the morning; blurring of vision. *Lycopodium.* Flatulency; full feeling after eating; pressure over the liver; constipation; uric acid crystals in the urine. *Creosote.* Diabetes complicated by consumption, with cough, expectoration, flatulency, and rapid emaciation.

A dose of the indicated remedy every two or three hours in acute cases; twice or three times a day in chronic. Alkaline waters, such as Vichy, Carlsbad and Marienbad may be used freely, also rain water and distilled water. Diabetics may eat eggs, cheese, shell fish, salt and fresh fish; fowl and game, ham, bacon, mutton, sweetbreads, kidneys; salads; olive oil, butter, cream, cod liver oil, bone marrow; sauerkraut, lettuce, sorrel, mushrooms, watercress, spinach, chicory, celery, cucumbers, tomatoes, lemons, sour cherries, gooseberries, strawberries, oranges, and nuts except chestnuts; gluten bread, bran bread, rusk, and almond bread; glycerin or saccharine should be used to sweeten tea or coffee; no alcoholic beverages; meat soups are allowable; a milk diet is beneficial in some cases.

Daily bathing, fresh air, sunshine, freedom from care and worry, and the wearing of flannel all the year round are recommended. Directions for the detection of sugar in the urine are given on page 373.

Acute Bright's Disease.—*Acute Nephritis.*

This is an acute inflammation of the kidneys frequently brought on by exposure to cold and wet, especially if after the use of alcoholic beverages, or occurring in connection with scarlet fever or other infectious diseases, pregnancy, skin diseases, or may be caused by many vegetable and mineral poisons. Sometimes no cause is discoverable. Acute cases last from a few days to five or six weeks; the longer the duration of the case the worse the outlook; suppression of the urine is the most unfavorable symptom.

Generally the onset of this disease is sudden, with slight swelling or puffiness of the face, but this may be preceded by chilliness, fever with nausea, and persistent vomiting; dull pain over the kidneys extending downward; frequent desire to urinate, and diarrhœa; much debility. As the disease progresses there is full, quick pulse; twitching of the muscles; drowsiness, and may be much dropsy.

Aconite.—In the early stages in cases resulting from exposure to cold and damp, with high temperature, full, rapid pulse, dry skin, great restlessness, dark, scanty urine.

Belladonna.—In the early stages, especially in children, with flushed face, throbbing arteries in the neck, bounding pulse; hot, but moist skin which steams when the bedclothes are raised.

Apis.—Much dropsy, with no thirst; whitish, waxen, transparent look to the skin; scanty urination; albumen in the urine; more especially when this condition follows scarlatina or accompanies pregnancy.

Cantharis.—Burning pain in the loins; severe vomiting; mental stupor; constant desire to urinate but passes only a few drops of turbid, bloody urine; suppression of urine.

Terebinthina.—Acute cases resulting from infectious diseases, or exposure to cold; burning, drawing pains in the region of the kidneys; scanty, bloody urine, passed drop by drop; general dropsy; suppression of urine.

Also *Mercurius cor.* when, with scanty urine containing albumen and much irritability of the bladder, there is diarrhœa with much colic and straining; difficult breathing, and puffiness of the face and feet. *Phosphorus* when there is consumption of the lungs, or heart disease, or ulceration of the bones, with wasting and nervous exhaustion.

A dose of the indicated remedy every three hours. Rest in bed, quiet and warmth are essential in the general treatment; flannel blankets may be substituted for cotton sheets, and canton flannel or flannelette nightdresses used; milk, buttermilk and gruels are the best foods, with koumyss, rice, vegetable soups without onions, grape juice; distilled or carbonated waters in abundance, lemonade, especially hot. A hot pack for an hour, consisting of a blanket wrung out in hot water and wrapped round the patient, with a dry blanket and a rubber sheet on the outside, may be given every other day, or a hot tub bath to increase the activity of the skin.

Chronic Bright's Disease.—*Chronic Nephritis.*

Gout, lead poisoning, chronic alcoholism, and an inherited tendency are the chief causes of one variety of the chronic form; prolonged exposure to wet and cold, pregnancy, scarlatina, acute nephritis, and some authors add malaria. The symptoms resemble those of the acute form, but develop more insidiously, with even greater general debility, headache, indigestion, lassitude, nausea and drowsiness. In the first named variety dropsy is infrequent except toward the last, with failing heart. The quantity of urine may be much increased for quite a long while. It contains a large amount of albumen. The duration of the disease is from one to twenty years. Consult the remedies given under "Acute Bright's Disease," especially *Cantharis* and *Mercurius cor.*

Plumbum.—Loss of appetite; frontal headache, worse from mental application; oppressed breathing, worse at night; swelling of the ankles, dry skin, even after exercise; colicky pains; obstinate constipation; abdomen drawn in; skin pale, rapid emaciation and debility; absorption of the waste matter into the blood, causing a tendency to convulsions.

Phosphoric Acid.—Frequent, profuse, watery or milky urine, depositing a sediment; great debility and loss of flesh; mental exhaustion.

Arsenicum.—Much dropsy; restlessness, thirst, anxiety, restlessness, worse at night, and must lie with the head high; dropsy of the chest, puffiness about the eyes, and swelling of the feet and limbs.

Also *Kali iod.* in syphilitic cases, five to ten grain doses three times a day. *Digitalis* when with dropsy and difficult breathing there is a weak, irregular pulse. A dry, warm climate, and much rest in bed are desirable; a warm tub bath daily, continued for from ten minutes to half an hour; daily inhalations of oxygen gas; small quantities of food, as recommended for acute cases, and at frequent intervals; the securing of free movements of the bowels by the use of saline laxatives. To increase the flow of urine when dropsy is excessive, twenty or thirty drops of *Apocynum cannabinum* may be given every three hours until the desired effect is obtained.

Inflammation of the Urethra.

Exposure to wet and cold and local injuries may cause inflammation of the urethra, but the most common cause is infection by the germ called the gonococcus of Neisser at the time of impure sexual intercourse, the disease resulting is called gonorrhea. This affection is fully described on page 404. The principal symptom following burning heat, tenderness and puffiness at the entrance to the urethra, is a catarrhal discharge soon changing to thick, purulent matter; there are painful and persistent erections, and owing to the swelling of the lining membrane of the urethra, the urine may be passed in spurts or drops, or as a twisted or forked stream. Symptoms appear between the first and fourteenth day after exposure; generally from the third to the seventh. The disease is highly contagious, and when transmitted from a man to a woman causes many and serious diseases of the pelvic organs.

Gelsemium.—Drop doses of the tincture every three hours early in the acute stage; moderate discharge; smarting and burning at the entrance of the urethra, and not much pain.

Cannabis Sativa.—Smarting, burning, stinging during urination; constant urging; copious, thin discharge; foreskin swollen and painful, urine passed drop by drop, pains extending into the scrotum, with dragging in the testicles. Drop doses of the tincture.

Before using Homeopathic Medicines read pages 681 to 684.

Cantharis, 2 x.—Extension of the inflammation toward the bladder; passage of blood or bloody urine; inflammation of the bladder. See indications for *Cantharis* under that heading.

Mercurius.—Free greenish and purulent discharges worse at night; dark purplish swelling of the parts; inflammation of the foreskin; thickening of the walls of the urethra so that the stream of urine is much diminished in size; painful erections. Give *Mercurius cor.* instead when, with the above symptoms there is great urging to urinate, burning and scalding.

Also *Aconite* in the very beginning, if inflammation of the urethra is due to exposure to cold and wet. Arnica when caused by wounds.

Copaiva.—Gonorrheal inflammation, with constant desire to urinate; painful, bloody urination; profuse, yellow, purulent discharge; painful erections. Capsules containing five minims or drops; one three times a day.

A dose of the indicated remedy every two or three hours, unless otherwise specified. Immersion of the male organ frequently and as long as possible in water as hot as can be borne is recommended in acute inflammation. A five to ten per cent. watery solution of ichthyol makes a satisfactory injection. Treatment by injections is best pursued, however, under the advice and direction of a competent physician, and only such should be consulted. For painful erections, keep the bowels, especially the rectum free; sleep on a hard mattress, with light bed coverings and in a cool room, and use suppositories of opium, one grain and camphor two grains. The diet, especially during an acute attack, should be light and unstimulating; no stimulants, tobacco, or effervescing drinks; avoid tea and coffee; refrain from sexual intercourse; take frequent sponge baths; drink water freely between meals; be very careful not to infect the eyes; a "gonorrhea bag" should be worn with a little cotton in it which should be frequently changed.

Inflammation of the Testicles.—*Orchitis.*

INFLAMMATION of the testicles may occur in the course of gonorrhea, one or both being involved, and unless inflammation is checked, becoming exceedingly painful and badly swollen.

Aconite.—In the very beginning when there is much congestion of the parts, with general feverishness.

Pulsatilla.—Drawing, stretching pains, from the abdomen, through the spermatic cords, into the testicles; swelling of the testicles, with soreness and tearing pains; swelling of the right side of the scrotum. This remedy is doubly indicated when the above symptoms are associated with those enumerated under "Inflammation of the Urethra."

Clematis.—Follows *Pulsatilla* well, when the testicles are inflamed, swollen and painful, sensitive to touch, and one or both drawn up; interrupted flow of urine, with burning, especially when beginning to urinate.

Hamamelis.—Severe neuralgic pains in the testicles; intense soreness and swelling; pain running down the spermatic cords into the testicles.

A dose of the indicated remedy every two hours. Hot fomentations of hamamelis to the parts will relieve pain, or a tobacco and flaxseed poultice made light and as hot as can be borne. Support the scrotum by a square cloth folded diagonally, and the corners fastened to a waist band; when the swelling has partially subsided, apply ichthyol, ten per cent. in vaseline, or compress the testicle by strapping with straps of adhesive plaster. Avoid constipation, sexual excitement, alcoholic beverages, highly seasoned food, tea, coffee and tobacco. A light diet, and rest in bed are beneficial.

Syphilis.

THIS loathsome disease is described at length on pages 394 to 432. If curable, it is not to be eradicated in a few months. The sufferer owes it to himself and to the community to put himself under the care of a competent and conscientious physician, and scrupulously carry out his instruction. It will very likely be necessary to continue treatment for three years if the sufferer is a man, four years if a woman. No greater crime can be committed than to marry while uncured.

Phytolacca.—In the first stage, with enlargement of the adjacent glands; headache; sore throat; syphilitic rheumatism and bone pains, worse at night and in damp weather; also, after eruptions and ulcerations occur.

Mecurius Sol. or Vivus, 2 x.—For mild cases without much glandular enlargement; syphilitic fever; pains at night; red, flat and scaly eruption especially on the palms of the hands; lining membrane of the throat a darkish-red.

Mecurius Prot, 1 x.—When the glands are badly swollen, and the case proves a stubborn one; falling of the hair; throat very sore, or give *Mercurius bin*, 2 x when, with the above symptoms, the tonsils are badly swollen and very sore.

Mecurius Cor, 3 x.—Rapidly spreading, creeping ulcerations with ragged edges, eating into the tissues; inflammation of the eyes; redness and burning of the mouth and palate, attempting to swallow liquids or solids often causes spasms of the throat; syphilis of internal organs.

Before using Homeopathic Medicines read pages 681 to 684.

It is better not to begin taking any form of mercury until skin eruptions appear.

Kali Iod.—Most useful in the third stage of syphilis, when the poison seems to have soaked into all the tissues, and where ulcerations of the skin and mucous membranes are extensive and extending; scrofulous, debilitated conditions; violent headache, with hard lumps on the head; eruptions on the face, scalp, chest and back that leave scars; foul breath; sore throat; fetid, greenish discharge from nose; ulceration and decay of the bones; gnawing, burning, boring pains worse at night.

Nitric Acid.—A valuable remedy when a case has been so mismanaged as to have been saturated with mercury or potassium; offensive, corroding discharges from ulcers and sores; splinter-like pains; scaly eruptions; deep, bleeding cracks at the corners of the mouth; foul breath; ulcers bleed easily; ulceration of the genitals, of the nostrils and throat.

A dose of the indicated remedy three times a day. Cleanse the sores with a mild antiseptic, as bichloride of mercury 1 to 2,000 or 1 to 3,000, and dust with calomel, aristol or iodoform, or protonuclein (special). As local treatment must be followed up for a long time, and changes made as indicated, the advice of a competent physician is highly desirable. Drink no alcoholic beverages; refrain from sexual intercourse or excitement; do not use tea, coffee, tobacco, spices or rich or indigestible food; take alkaline or sulphur baths; live out of doors as much as possible, and exercise or work in the open air; keep the mouth and teeth clean.

Diseases of Infants and Children.

Red Gum.

In extreme infancy red gum is due to congestion of the sweat glands from hot weather, an overheated room, or to too many clothes, but may occur later during teething. Small red or white pimples appear on the face, neck or arms, or less frequently over the entire body. Each pimple has a semi-transparent spot in the centre, but no fluid escapes when it is pricked; these pimples have a hard, "shotty" feel, and bleed a little on being scratched.

Antimonium Crud.—Is to be thought of when the child has indigestion, vomits milk after nursing, and refuses to nurse again; tongue coated white; mucous discharge from the bowels.

Borax.—Red eruption on the cheeks and around the skin; sore mouth, with great heat and dryness and blisters.

Chamomilla.—Red rash on cheeks and in the folds of the skin, with sweating; irritability, peevishness; child sleepy but cannot sleep.

Give a dose of the indicated remedy every three or four hours. The principal treatment must be hygienic, with reference to diet, bathing, and fresh air.

Chafing.

To prevent chafing of a baby's skin, keep it clean, but never rub it roughly, or dress the child so that the clothing causes irritation. Never let wet diapers stay on a child, or put on diapers that have been dried without washing after using. Do not use dusting powders to excess, but if the surfaces are abraded anoint with calendula or hamamelis cerate, or plain or carbolized vaseline.

Crying.

In young children crying is a symptom worth considering, and by no means always indicates that a child is hungry, therefore do not anticipate the feeding-hour, but give a drink of water, and try to discover what other reason there may be for the evident discomfort. Constant crying until exhausted, and after a short nap beginning again indicates pain, especially colic or earache (consult the section on "Colic"), while hoarse crying on awakening after sleep in a child not given to crying may portend croup; a sharp, distressing crying, with cough and effort not to cough, suggests lung trouble, and in brain affections the cry is sudden, sharp, piercing, and paroxysmal.

When no cause is discoverable, and the child seems simply fretful and uneasy, and wants to be carried all the time, give a dose of *Chamomilla* every hour for three or four doses, or *Coffea* when the child is merely very nervous and excitable, and cannot be put to sleep.

Endeavor to discover the cause; it may be only tight or too much clothing; chafing; wet clothes; an ill placed pin; thirst; too much light, noise or excitement, or, in nursing infants, mental or physical disability in the mother, especially indigestion or temper.

Milk Crust.—*Eczema.*

The most common form of eczema in infants is that known popularly as milk crust, a term properly belonging to eczema of the face, but sufficiently descriptive of the frequent extension to the scalp, the treatment being the same. The first symptoms are redness and itching, then the formation of small pimples which rupture and exude a sticky fluid; this drying, forms a crust, with a raw surface beneath. The same eruption may appear in the folds of the groins or joints, with intolerable itching. Indigestion causes many cases of eczema in infants. They should never be put to the breast whenever they cry, but be fed at regular intervals; improper food is another cause, also lack of cleanliness and hygienic surroundings; irritating soap or neglect to rinse the soap off.

Rhus Tox.—Eruption on a raw, excoriated surface, exuding a thin, sticky, offensive serum, which forms thick crusts; especially on the face and scalp; burning and itching worse at night.

Graphites.—Moist eruption, with thick crusts on raw, inflamed surfaces, which exude a thick, sticky serum; much soreness, especially behind the ears; itching and redness; symptoms worse from scratching and at night.

Hepar Sulph.—Moist, rather thick, yellowish exudation in fair, plump, or scrofulous children.

Calcarea Carb.—Children of the above type, with eruption covered with thick, greenish-yellow crusts, formed from the gummy, yellowish, pus-like secretion; intense burning, itching; painful cracks in the skin.

Arsenicum.—Burning, itching eruption, painful after scratching; crusts surrounded by an inflamed, painful border; pain and itching, worse at night, and from cold and scratching, but better from warmth; hair falls out; child thirsty. A useful remedy, also, in chronic cases when there are fine, branny scales on a dry, white skin.

Sulphur.—Bad-smelling, purulent oozing forms thick crusts which bleed easily; much itching with burning.

A dose of the indicated remedy every three hours. Consult also the section on "Eczema" in this part of the book. An infant, or small child should be fed regularly in small quantities food that is nourishing and digestible; should be kept scrupulously clean, and be out of doors much of the time in suitable weather; regulate the bowels; do not allow powder to cake on the skin; remove crusts by the application of warm, soft water or with warm olive oil; the latter is an excellent emollient, or carbolized vaseline may be applied, and when inflammation is slight, equal parts of fine starch and oxide of zinc, or buckwheat or rye flour may be dusted on. Itching is an annoying and even distressing symptom in these cases; peroxide of hydrogen, one part to three parts water alleviates this, or one-half to one drachm carbolic acid and an ounce of glycerine to a pint of hot water. Mittens may be tied on a child's hands to prevent scratching.

Teething.—*Disturbances of Dentition.*

JUST before the teeth begin to make their appearance there is a noticeable increase of saliva which dribbles from the mouth and is called drooling. The baby rubs the gums, sucks his lips, and constantly moves his jaws, thus indicating the cause of his uneasiness. The gums will be found swollen and cushiony, and hot and tense just before a tooth comes through.

Sometimes there is feverishness, great irritability and crying. There may be stomach and bowel disturbances, inflammation of the middle ear, sometimes catarrh of the respiratory organs, and often nervous symptoms, even convulsions.

Aconite.—Feverishness; heat; redness; pain; restlessness; swollen gums.

Chamomilla.—Fretfulness; child wants to be carried about constantly; nothing pleases; diarrhœa, with loose *green* or *frothy* stools.

Belladonna.—Face red, eyes bright, child excited, nervous; convulsive movements and moaning in sleep; starts up suddenly when waking.

Calcarea Carb.—A valuable remedy in cases of slow or late dentition, with looseness of the bowels, weakness and emaciation; sour smell; milk disagrees.

Silicea.—Tardy teething in rickety children; teeth seem ready to come through, but do not.

A dose of the indicated remedy every one to three hours. Bathe the child in tepid water twice a day; give pure, moderately cool water to drink often; keep the child out of doors, but not exposed to the wind or direct rays of the sun; if there is diarrhœa, consult the remedies in that section.

Convulsions.—*Fits.*

CONVULSIONS may be due to teething, worms, cold or heat, indigestion, suppressed eruptions, irritation from the accumulation of secretions about the genitals, epilepsy, improper feeding, constipation, fright or serious diseases of the brain. Although the child is apt to be irritable and languid for a few days previous, the condition often goes unnoticed, and the attack comes as a complete surprise. As convulsions in children are always attended by danger, prompt and intelligent treatment is of great importance.

Belladonna.—Face bright red and intensely hot; the child suddenly becomes rigid, stiffens out, and foams at the mouth; between convulsions the child starts and twitches, cries out suddenly or moans incessantly.

Æthusa.—Convulsions in children suffering from summer complaints; spasm begins in the fingers and toes, the former clinched and the latter drawn in; bending of the body backward. *Cuprum* has much the same symptoms, with rigidity of the jaw, causing the child to bite the spoon when medicine is given; especially indicated when eruptions in fevers disappear suddenly

Nux Vom.—Convulsions from indigestion or excessive ill-temper, or in nursing children when the same conditions exist in the nurse; spasm renewed on slightest touch, jar or motion.

Chamomilla.—Extreme sensitiveness, great irritability; one cheek red, the other pale; restlessness, moaning, and twitching of the muscles of the face; diarrhœa.

Also *China* in convulsions due to worms or intestinal irritation from other causes; *Glonoine*, when brought on by exposure to heat, as the hot sun; *Ignatia* spasms following grief, punishment or suppressed anger; *Opium* after fright, with labored breathing, stupor, and face dark red; *Stramonium*, suppressed eruptions, where the child shrinks from everybody and is frightened, and the room has to be kept dark, as light aggravates the spasms.

Place the child at once in a warm bath of a temperature of about 100 degrees, applying a sponge wrung out in cold water to the head. The bath should last from three or four minutes when the child is much exhausted, to from ten to fifteen minutes in ordinary cases.

After the bath put the child in a warm bed. If the convulsions are due to constipation, give a rectal injection or dose of castor oil; if to swollen gums during teething, have them lanced; if the genitals require attention, do not allow them to be neglected.

Snuffles or Coryza.

INFANTS and young children often take cold easily in cold or damp weather, begin to sneeze and snuffle, with running of mucus from the nose or a stuffed condition, and sometimes feverishness and flushed face. Always treat such condition in the very beginning.

Camphor.—A drop on sugar, repeat every half hour for three doses, when there are signs of having taken cold after getting wet, or after exposure in damp, foggy weather.

Aconite.—Feverishness and sneezing in cold, dry weather, or after exposure to high winds or draughts.

Arsenicum Iod.—Running of mucus from the nose, which reddens the nose and lip; constant sneezing.

Nux Vom.—Nose stuffed up, or one nostril free, the other obstructed; difficult breathing; dryness of the nose, then running from the nose, followed by stuffiness, and so on; constipation.

Belladonna.—Considerable feverishness and flushing of the face, with sore throat which is bright red.

A dose of the indicated remedy every hour. Accustom the child to being out of doors, but put a veil over the face of young children in very cold, windy weather, or when there is much dust. When the child has inherited syphilis, *Mercurius sol.* twice a day will be helpful.

Mumps.—*Parotiditis.*

FROM two to ten years of age children are most liable to contract this disease, which is a contagious, acute inflammation of the glands secreting the saliva, lasting from five to seven days in mild cases, in others, two weeks with swelling of the glands elsewhere in the body. The symptoms are well described on page 256. Mumps generally pursue a mild course, but may be complicated by swelling of the breasts in the female, and of the testicles in the male; the ears, kidneys, and brain are also sometimes involved, but this is rare.

Belladonna.—Bright red, shining swelling, especially of the gland under the jaw on the right side; throbbing headache, red face and eyes; shooting, cutting pains.

Mecurius Sol.—Parts swollen but pale and the left side affected; little fever; considerable pain; alternate heat and chills; nightly thirst; night sweats; mouth waters; breath offensive; tongue flabby and shows the marks of the teeth. This remedy follows belladonna well.

Rhus Tox.—Dark red swelling, with much puffiness of surrounding tissues.

Pulsatilla.—This is the first remedy to be thought of when inflammation of the breasts or testicles occurs.

Also in the very beginning when there is much feverishness and restlessness a few doses of *Aconite* may be given, and later when it seems as if matter might form, with sticking, splinter-like pains, give *Hepar sulph.* A dose of the indicated remedy every three hours.

It is best even in mild cases to keep the patient in his room, and in bed if the attack is severe. Broths, milk, egg nog, and other light and easily swallowed foods may be given. Belladonna ointment may be applied externally, or biniodide of mercury, five grains to one ounce of lard or vaseline. Hot compresses or cold applications may prove soothing.

A bandage should be applied to support the testicles or the breasts if they become swollen.

Enlarged Tonsils.—*Chronic Tonsilitis.*

ENLARGEMENT of the tonsils in children should never be neglected, as the condition tends to become chronic; causes breathing through the mouth which is very harmful to the general health, and makes a child susceptible to catarrhal affections of the respiratory organs and to serious diseases such as diphtheria.

Baryta Carb.—Inflammation and ulceration of the tonsils upon the slightest exposure to cold or damp weather; the glands of the neck under the jaw and behind the ears often enlarged and hard. *Baryta iod.* instead in long standing cases, where there is excessive hardness and constant swelling. These remedies are especially useful for children nearing puberty.

Calcarea Iod.—Enlarged tonsils, especially in scrofulous children; tonsils full of little holes or pockets containing cheesy matter.

Mecurius Bin.—Enlarged tonsils, with chronic nasal catarrh, greenish-yellow mucus dropping back into the throat.

A dose of the indicated remedy three times a day. The tonsils should be cut out if the persistent use of other measures for one or two months is followed by no improvement. Build up the general health with malt or iron preparations, the hypophosphites, and especially cod liver oil; daily baths of moderately cold salt water, with brisk friction of the entire body; exercise out of doors, fresh air and sunshine in the house; paint the tonsils daily with tincture of iodine one part to four parts water.

Croup.

Membranous Croup.—*Membranous Laryngitis.*

In a large proportion of these cases the same germ is found which is characteristic of diphtheria, still there are cases in which it is absent, therefore membranous croup is a name answering for all as diphtheritic croup would not.

This disease rarely occurs after seven years of age, and usually not before a child is a year old; when not due to the diphtheria germ it is not contagious. Cold, damp winds favor its development. A hoarse croupy cough generally precedes the formation of any membrane, or simply hoarseness or huskiness. The cough occurs at night and has a ringing, brassy sound; there is wheezing, whistling respiration, and great difficulty and distress in breathing as soon as the membrane forms; the child's face turns red or purple, and he clutches at his throat while trying to cough, but the paroxysms fortunately do not last long except in bad cases. Croup ordinarily runs its course in from five to ten days, but may terminate fatally in from twenty-four to forty-eight hours.

Aconite.—In the early stages, with hoarseness and huskiness of the voice, or hard, ringing cough. It relieves congestion in the throat, and may prevent the formation of membrane, or at least lessen its amount. A dose every half hour, and it may be given in alternation with one of the other remedies.

Kali Bich. 1 x.—Gradual and insidious onset, at first only slight difficulty in breathing, which increases; hoarse voice, constant paroxysmal cough; tonsils and throat red and swollen; membrane forms; tough, stringy mucus in the mouth; offensive breath. Five grains in a third of a glass of water. A teaspoonful every fifteen minutes to one hour.

Iodine.—In the early stage when aconite has only partially relieved; hot, dry skin; very dry, violent cough in paroxysms; great pain in the throat; sawing respiration; hoarseness, and partial or complete loss of voice. Give as above.

Hepar Sulph.—Air breathed in with difficulty, but expelled easily; loose cough, but no expectoration; stitching pains from ear to ear, and feeling as if something was in the throat; all symptoms worse after midnight or towards morning. Give as above.

Tartar Emet.—Bad cases, child almost choked by the membrane which is tough and firm. One-half grain of the crude drug in half a glass of water. A teaspoonful every fifteen minutes until pieces of membrane are coughed up, or the cough begins to grow moist and loose.

Ipecac.—Convulsive evening cough; free secretion of mucus in the bronchial tubes, threatening suffocation. A drop of the tincture every half hour to every one or two hours.

In the treatment of croup moist air is essential. Cover the patient's bed with a tent made of a sheet and convey the steam from a teakettle or steam atomizer within this confined space. Pans of hot water may be kept on a stove or on radiators, and steam obtained by putting hot flatirons in the water if there is not fire enough. Lime may be slacked in the room, and cloths wrung out in boiling water hung up. Hot cloths applied to the throat are helpful. Bichromate of potash, one grain to the ounce, may be used to spray the throat. In all cases of membranous croup, the injection of 1000 units of diphtheria antitoxin is strongly recommended, as there is at least a strong possibility of the diphtheria bacillus being present.

Spasmodic Croup.—*Laryngismus Stridulus.*

Many know this form of croup under the name "False Croup." It is simply a nervous spasm of the throat, generally occurring in children under two years of age who are poorly nourished, have rickets or have some bowel or stomach trouble. The attack comes on suddenly and often very violently; the child holds his breath, grows livid in the face, and distress in extreme suffocation may even occur or the tack end in convulsions. Fortunately the disease is not nearly so dangerous as it looks. Remember that the general treatment must be inaugurated at once, and is as important as any drugs.

Aconite.—Attack excited by cold, dry air; spasm of the larynx (windpipe) and suffocative breathing; short, dry, hard, metallic cough. A dose every fifteen minutes during the attack, then every one or two hours.

Spongia.—Rough, crowing, barking cough; wheezing, whistling respiration; great difficulty in breathing. May be alternated with aconite.

Sambucus.—Sudden waking after midnight, child sits up in bed, turns blue, gasps for breath; quick, wheezing respiration, suffocative cough, with crying. Give as above.

Belladonna.—Child very nervous and excited; even a sip of water causes spasm; skin hot and dry, and throat painfully dry. Give as above.

A weak solution of *Chlorine* in water, so weak that the odor is just perceptible, is a most efficient agent. A teaspoonful every fifteen minutes or at long intervals.

Dash cold water on the child's chest, or immerse the child for a few minutes in a warm bath, temperature 90° F. Keep the child in a half lying down position, and draw the tongue forward. To prevent recurrence of attacks improve the child's nutrition by a digestible nourishing diet; do not give it too much food at one time; the clothing should be light weight woolen; exposure to cold, damp air or draughts must be avoided; have the child out of doors a great deal in mild, pleasant weather; cod liver oil is an excellent reconstructive; sponge baths must be frequently given with friction but gently so as not to excite a spasm.

Simple Fever.

FEVERISHNESS is quite common in children and often in delicate women of a nervous temperament, and does not invariably usher in any acute or serious diseases. The following remedies may be given as indicated, a dose every half hour or hour, and should be administered as soon as possible to prevent further development.

Aconite.—Feverishness after exposure to dry cold or cold winds, and after perspiration has been checked by draughts; getting wet while heated.

Arnica.—After wounds or hard physical labor or excessive exercise; feverishness, with bruised sore feeling; desire to lie down but keeps shifting about for a soft place in vain.

Belladonna.—Feverishness after having the hair cut, riding in a cold wind, going to dances or other excitement; face bright red; eyes bright and pupils dilated; restlessness and throbbing headache.

Ignatia.—General depression and prostration, with feverishness, headache as of a nail in the side of the head; loss of appetite; yawning and sighing; after grief, bad news, shame, or mortification, and for children after having been scolded or punished.

Gelsemium.—Feverishness and often high temperature in hysterical women, with vertigo; weakness and trembling; chilliness; bursting pressive headache; exhaustion after slight effort.

Bryonia.—Feverishness in rheumatic or irritable individuals, after taking cold or getting heated in summer; profuse perspiration even from slow walking; headache, as if the head would burst on stooping; feeling of dry, burning heat inside and desire to keep quiet.

Pulsatilla.—Feverishness following any indiscretion of diet, as eating pastry, ice cream, pork or sausage, or at the monthly flow, especially in mild, gentle, fair women without much force of character.

Rhus Tox.—After getting wet, straining a single muscle, keeping on wet clothes, going in swimming in too cold water, sleeping in a damp bed; constant desire to move about.

A dose of the indicated remedy every one or two hours.

Chicken Pox.—*Varicella.*

Of all the eruptive fevers, chicken pox is the mildest, but it is highly contagious, and few children who are exposed to it escape it. The most susceptible age is from one to five years, and one attack is usually protective. The eruption may appear without any preliminary symptoms, or there may first be slight chill, fever, lassitude, nausea and loss of appetite. Small raised spots, averaging the size of a pea, appear first on the chest and back, or on the forehead, face, and scalp, develop a watery fluid, dry up by the third day, turn into yellowish or brownish crusts and drop off in a few days. Fresh crops appear during the first two or three days, but cease in about a week. To distinguish between small pox and chicken pox bear in mind that small pox is ushered in by pronounced chill, high fever, vomiting, intense headache and backache, followed by the eruption of small red points, which, as they enlarge, feel like fine shot under the skin.

But few remedies are needed in chicken pox. *Aconite* for chilliness, heat, thirst and restlessness. *Belladonna.* Headache, sleeplessness; eyes very bright, and face much flushed. *Rhus Tox.* If the eruption is extensive, with much itching and burning.

Keep the child warm in bed, on a light or liquid diet, in a warm, well-ventilated room free from draughts; keep him separate from other children, give a tepid sponge bath every day.

Scarlet Fever.—*Scarlatina.*

The disease germs of scarlet fever remain active months and years, and may be retained by books, clothing, letters, etc. It is evident how necessary it is that every precaution should be taken to prevent infection in this way. On page 157 will be found a description of the symptoms of scarlet fever and its characteristics distinguishing it from measles. The most important complication is inflammation of the kidneys, and the next most common, inflammation of the middle ear with formation of pus.

Belladonna.—Perhaps the most important single remedy in scarlet fever, and chiefly called for by the smooth, scarlet redness of the skin, sore throat, high fever and head symptoms. We find marked nervous excitement and disturbance of the circulation, with throbbing of the arteries; face bright red; eyes infected; sometimes delirium; burning hot skin; pulse full, or small and quick; throat and tonsils inflamed and swollen; tongue white, with red points; *bright scarlet, smooth* rash.

Gelsemium.—Early in the disease when the patient is languid, quiet and much prostrated; dizziness; aching in the back and limbs.

Rhus Tox.—Small fine eruption, containing small red points or vesicles and of a darker color than the belladonna eruption, with dark mottled eruption; high temperature; swelling of and sometimes discharge from the glands under the lower jaw; brownish deposit on lips and teeth; restlessness; delirium.

Bryonia.—Tardy development or suppression of the eruption· face red; lips dry; tongue brownish; great thirst, and drinking much at a time; disinclination to move, and pain on moving; especially useful when fluid forms in the chest owing to involvement of the covering of the lungs.

Arsenicum.—Delayed eruption in malignant scarlatina, or the rash suddenly turns pale or livid, and is interspersed with small spots like flea bites; tongue dry, brown, cracked or blackish and smooth; great prostration and restlessness; also with putrid sore throat; scanty urine, and involuntary, loose movements. Not a remedy for the early stages.

Also *Aconite* in the very beginning with characteristic high temperature, and full pulse; great anxiety and restlessness; do not give after the eruption appears. *Apis.*—Burning, stinging pains in the throat, with swelling; smooth eruption; drowsiness; great restlessness and nervousness; early prostration; scanty urine.

A dose of the indicated remedy every one or two hours.

The sick room should be well ventilated and kept at a temperature of about 70° F. Do not let the patient sit up until several days after his temperature has become normal. Milk is the best nourishment while fever continues, or milk with beef peptonoids, malted or peptonized milk; later broths, white of egg, fruit juices, and afterward custards, dropped eggs, blanc mange, etc. Plenty of water to drink at all stages; sponge baths two or three times a day if there is much fever, or a wet pack; inunctions of lard, olive oil or cocoa butter alleviate itching, and prevent the scattering of scaly particles when the eruption begins to dry up. Cloths used to receive expectoration, etc., should be burned; bed clothes and other clothes disinfected. The use of oxygen for inhalation in malignant cases is recommended by reliable authorities.

At the conclusion of a case everything in the room must be disinfected, scrubbed with disinfectant or burned. Do not rely on the burning of sulphur in the room, but cleanse everything with bichloride of mercury 1 to 1,000, then have the walls repainted or repapered.

Measles.

This highly contagious disease is described at length elsewhere, and is usually of a mild type, but it should be remembered that if neglected or improperly treated, serious complications such as bronchitis, pneumonia, inflammation of the eyes, ears or throat may occur, and the future health or even life itself be endangered. The disease develops in from seven to fourteen days after exposure, and no age is exempt from an attack.

Aconite.—In the beginning, with fever, dry, hot skin; full, frequent pulse; much thirst and restlessness; red, watery eyes, sensitive to the light; dry, hoarse or even croupy cough, gritting of the teeth.

Gelsemium.—In the beginning when fever is moderate, the pulse soft, and the patient quiet and languid; aching in the back and limbs; desire to be let alone.

Pulsatilla.—Marked catarrhal symptoms, with little fever; thick, yellow, bland discharge from the nose; eyes water and are red; loss of appetite; coated tongue; bad taste in the mouth; may be vomiting and pain in the stomach.

Euphrasia.—Eyes and nose much affected; hot and burning watering of the eyes; copious bland discharge from the nose; hoarseness and dry cough.

Veratrum Vir.—High temperature, and full, strong pulse, with delayed eruption; convulsions.

Tartar Emet.—Measles complicated with bronchitis; with wheezing. rattling respiration, and profuse discharge of mucus; difficult breathing.

Also *Belladonna* in the early stage when the fever is high; face flushed; eyes bright and pupils dilated; throbbing headache; sore throat; starting in sleep or cannot get to sleep. *Bryonia.*—Tardy eruption; dry, painful cough; soreness of the limbs and body; hard, bursting headache; oppressed breathing; stitches in the chest.

Arsenicum.—Bad cases much prostrated, with too early or sudden disappearance of the rash; quick, small pulse; constant craving for a little cold water; restlessness; vomiting and diarrhœa. A dose of the indicated remedy every hour.

The patient should be isolated in a well-ventilated room free from draughts and of an even temperature of about 70° F. and the light partially excluded. If there is high fever, give cool sponge baths, otherwise a warm sponge bath daily, and anoint the skin with carbolized vaseline or cocoa butter. Use a shade for the patient's eyes or a screen whenever there is a bright light in the room. Liquid diet during fever; disinfection of all discharges, and absolute cleanliness; fumigate the room when the case terminates.

Colic.

It has been truly said that some children seem to have been born colicky; usually, however, colic is due to indigestion or constipation, and, in nursing infants, to indigestion in the nurse or excessive emotion. Worms or obstruction of the bowels may cause colic, and, in older children, eating unripe or decayed fruit or drinking large quantities of cold water.

The principal symptoms in infants are sudden waking out of sound sleep with sudden paroxysm of spasmodic crying, drawing up and then straightening of the legs, clenching of the hands, jerking of the feet, tossing and contortion of the whole body, and often flatulence, with distention or retraction of the abdomen. Steady, gentle pressure often temporarily relieves.

Chamomilla.—Colic with flatulence; passing wind does not relieve; distended abdomen, sensitive to touch; contractive pains; greenish diarrhœa, smelling like rotten eggs.

Nux Vom.—Colic, flatulence, constipation; colic following the administration of soothing syrups or other drugs.

Colocynth.—Apparently severe, cramp-like pains, worse every five or ten minutes; great restlessness; moaning; twisting and doubling up of the body.

Pulsatilla.—Flatulent colic with nausea, vomiting, and green, watery, slimy diarrhœa.

Plumbum.—Violent colic, with drawing in of the abdomen; rumbling in the bowels; obstinate constipation.

Do not give gin, brandy, paregoric or soothing syrups. Put the child in a hot bath, or apply hot compresses to the abdomen; give hot water to drink; inject hot water into the rectum, or if the rectum is packed with hard fecal matter, inject an ounce of warm olive oil; rub the abdomen gently and put on a flannel binder; omit or reduce the nourishment during the attack.

Cholera Infantum.

BOTTLE-FED babies in hot weather, and under unhygienic conditions are particularly liable to suffer from this disease, which is characterized chiefly by the suddenness of its onset, with violent vomiting and diarrhœa. The frequent profuse discharges rapidly become watery, colorless and bad smelling; while the vomited matter, at first containing food, soon consists of mucus or watery fluid and bile and everything is vomited as soon as taken. There is great thirst, a pale, pinched, drawn look to the face, and rapid emaciation. Death may occur in a few hours, or improvement set in within a day, the cessation of vomiting being one of the first hopeful signs. High temperature and a very rapid, feeble pulse is found in these cases, with coldness of the skin and extremities.

Veratrum Alb.—Vomiting and purging, especially the latter, followed by *great prostration; cold sweat on the forehead;* severe colic, stools profuse and watery; great thirst; feeble, weak pulse.

Ipecac.—Copious, watery, green stools of blood and mucus, with *constant nausea,* vomiting and colic.

Arsenicum.—*Extreme restlessness, unquenchable thirst for small quantities of water,* great prostration; stools dark, watery, offensive, worse after eating or drinking and after midnight; extremities cold; face pale.

Mecurius Dulcis.—Lessening of the fever, but continuance of the diarrhœa with griping pains; much mucus in stools, and sometimes blood, with much urging.

Podophyllum.—Stools profuse, *painless,* watery, with meal-like sediment; gagging and retching without vomiting.

Cuprum.—Green, painful, frequent but rather small stools; retching, violent but fruitless attempts to vomit; tendency to convulsions from the beginning; eyes sunken, with blue rings about them; colic and cramps.

A dose of the indicated remedy every hour. Refer to the remedies mentioned under "Asiatic Cholera," especially *Camphor.*

Let the stomach rest absolutely for twenty-four hours. Warmth and stimulation are essential in collapse; wrap the child in hot flannels, and put hot water bottles in the bed, being careful not to burn the sufferer. If there is no coldness of the skin and extremities, but much fever and restlessness with the stomach and bowel disturbance, keep the child in a cool place, well ventilated and out of draughts; give frequent sponge baths, and plenty of water to drink that has been boiled. The stomach should be thoroughly emptied in the first place, in children over two years of age, by giving large drinks of boiled water, or the stomach may be washed out by passing a soft rubber tube into it. Hot injections may be used to flush out the bowels. Do not give milk, but begin with barley water and cream, or raw beef juice, or unsalted, strained chicken or mutton broth at intervals of four hours, and in amount from one-fourth to one-half the quantity usually taken. Fresh air is essential, and a change of air, especially to that by the sea, is beneficial. A binder of soft flannel about the abdomen is to be recommended.

In simple diarrhœa consult the list of remedies and general treatment under "Looseness of the Bowels."

Jaundice in Children.

In early infancy simple jaundice is due to a distension of the blood vessels of the liver which quickly passes away as the bile passes off more freely. The yellow hue of the skin, and the pearly look to the whites of the eyes will be easily recognized. In little children jaundice is not infrequent after catching cold, the liver being congested, and other symptoms such as chilliness, moderate fever, headache, sometimes vomiting and diarrhœa or constipation developing.

Aconite or *Ferrum phos.* may be given for symptoms of congestion due to exposure to cold or checking of perspiration. *Nux vom.* when overfeeding is the cause. *Ipecac.* Congestion with much nausea and vomiting. *Mecurius sol.* Tongue heavily coated white, and shows the imprint of the teeth; constipation, and the stools may be gray and pasty. Give a dose of the indicated remedy every three or four hours. Consult the remedies mentioned under "Jaundice," especially *Chamomilla*, *China* and *Chelidonium.*

Great care should be exercised in feeding children old enough to have a mixed diet; an excess of meat and starchy foods should be avoided; fresh fruits and vegetables given judiciously; no tea, coffee, pastry or fried foods or fresh bread. The last meal of the day should be light; all the habits of the child should be regular, and the bowels and skin kept active. Plenty of not too cool water should be drunk between meals.

Retention of the Urine in Young Children.

Exposure to cold or catching cold, or extreme nervousness may cause temporary retention of urine in young children, when there is no organic trouble. One of two remedies is all that will usually be called for: *Aconite* in retention from cold, with crying and restlessness, or *Belladonna* in full-blooded, excitable children, with spasm of the neck of the bladder, and passing of water drop by drop with great difficulty and urging. Consult the section on "Retention of Urine and Strangury" for other remedies, and for the general treatment.

Wetting the Bed.—*Nocturnal Enuresis.*

Ordinary cases in children are of nervous origin, from impoverished blood; hysteria; too long a foreskin or adhesion of the foreskin in little boys, or in girls of the clitoris, or lack of cleanliness about these parts and the accumulation of a white, cheesy secretion called smegma. Other causes are worms; masturbation; cracks in the rectum; eczema; irritation of the bladder from acid urine due to improper food or drink. Some children seem to have a constitutional weakness.

Causticum.—Especially useful in boys and women, according to Cowperthwaite, when no special cause is discoverable, and urine passes in the first sleep, or on coughing, sneezing, or the slightest excitement in daytime.

Belladonna.—When wetting the bed at night seems to be a habit; restless sleep, and sudden starting from sleep, especially in nervous, excitable children.

Equisetum.—An excellent remedy in constant nightly wetting of the bed in children; also in weakness of the bladder, and dribbling of urine in old men, or in the insane

Benzoic Acid.—Irritable bladder, with dribbling of high colored, strong smelling urine.

Sulphur.—Long standing, chronic cases, where no special cause is assignable; pale, lean children, with large abdomen, fond of sugar and highly seasoned food and averse to being washed.

Also *China* or *Santonine* when the patient has worms. *Pulsatilla.* Wetting the bed, especially in little girls; profuse flow of pale, watery urine; dribbling of the urine while sitting or walking. *Gelsemium* when there is partial or complete paralysis of the neck of the bladder, or extreme nervousness; inability to hold the urine when excited as from "stage fright." These remedies should be given in the tincture or first decimal, a dose three times a day.

The bowels must be kept open; any discoverable cause of the affection removed; stimulating food and drinks, and excitement of every kind avoided; early hours kept; a firm mattress, with only light bedding used; much out-door exercise taken, and a daily cold sponge bath; the bladder must be emptied regularly; the last meal of the day be light, and little, if any water drunk in the evening. Electrical treatments may sometimes be taken to advantage

Night Terrors and Sleeplessness.

Highly organized or debilitated children are most subject to night terrors; enlarged tonsils or growths in the nose are frequent causes, and sometimes indigestion. The attacks usually begin between the appearance of the first and second sets of teeth, and rarely later than the eighth year. They occur during the first three or four hours after going to sleep, with sudden starting up, or screaming, and inability at first to recognize parents or friends.

Although the cases mentioned may favor sleeplessness, indigestion is probably the most prominent one; excitement is another common cause, also lack of regularity in the child's habits, constipation, worms, chafing, poor ventilation, and too little out-door life.

Aconite.—Sleeplessness, and great restlessness and tossing about; anxious, vivid dreams, waking with a start; nightmare.

Belladonna.—Expecially for excitable children, who get sleepy on going to bed, but start up as in a fright when just falling asleep; waking at night full of fear; moaning and tossing about in sleep. One of the most generally useful remedies.

Hyoscyamus.—Sleeplessness from excessive nervous excitement; restless sleep; starting from fright; deep sleep with convulsive movements; waking with a cry.

Nux Vom.—Much yawning and sleepiness during the day; sleepy in the early evening, but not on going to bed; wakes before daylight and stays awake a couple of hours, then goes to sleep and is awakened with difficulty; especially children having indigestion or constipation, and who sleep mostly lying on the back.

Chamomilla.—Fretful, irritable babies and children who whine, kick or scream, and are hard to please; moaning, starting up, crying, tossing about and talking in sleep.

Calcarea Carb.—Fair, plump children, easily tired; sleepy and weary during the day; fall asleep late in the evening, or stay awake for hours; have bad dreams, and are hard to arouse in the morning.

Also *Gelsemium* for nervous children who sleep fitfully all night, but grow more and more wakeful and restless, and have bad dreams after midnight; sleeplessness from nervous irritation. Refer as well to the remedies mentioned in the section on "Sleeplessness."

Secure good healthy surroundings for the child day and night; a quiet, well-ventilated darkened room; a firm mattress, light weight bed clothing, hair pillow; regulate the diet; give a warm sponge bath at night; do not let a child indulge in rough play or sit up late in the evening; do not make babies or little children "show off" at any time, or stimulate them to be constantly observing things; regularity as to sleep, feeding and exercise is important, all abnormal conditions, worms, constipation, eye defects, throat and nose affections must be remedied; to be sure the child is cared for by an intelligent, conscientious person.

Rickets.—*Richitis.*

Rickets is a chronic disease of nutrition, and while the only important anatomical changes are found in the bones, it must be remembered that it is not a bone disease, but one affecting almost every tissue and organ in the body. It occurs most commonly between the ages of six months and two years, in cities, especially in children fed on sweetened condensed milk and proprietary foods.

In the first place there are often disturbances of the stomach or bowels; the child tires easily; seems sensitive to handling; teething and walking are delayed; the head becomes larger and flattened on top; the lower part of the face peaked; the chest prominent (pigeon-breasted); and the front ends of the ribs feel lumpy like large beads; the long bones of the extremities grow soft and bent, and there is much perspiration of the head, face, neck, and chest; there may be irritability, sleeplessness, and twitching of the muscles.

Improper food and surroundings; bad air; dampness; lack of cleanliness, sunshine and exercise, and inherited constitutional weakness, are predisposing causes.

Calcarea Phos.—Fat, fair, flabby children; sallow, earthy complexion; teething and walking delayed; constant sour perspiration, especially during sleep; neck thin and weak, and head held up with difficulty; abdomen distended; may be sour vomiting, especially of milk, and diarrhœa; feet damp and cold.

Silicea.—Copious perspiration, especially of head; enlarged abdomen; child emaciated and scrawney; tenderness of body and soreness of head to touch; tendency to enlarged glands and lumps on head; small wounds heal with difficulty

Sulphur.—Voracious appetite; milk disagrees; emaciation; constipation, or early morning diarrhœa; tendency to skin eruptions; child sleeps in cat naps; detests water and being bathed; sour, copious night sweats.

Phosphoric Acid.—Frequent, persistent, copious diarrhœa, preceded by rumbling of flatus in the bowels.

Ferrum Phos.—Tenderness of the limbs, and pain on motion; great debility, paleness and weakness; bronchitis, and bronchitis with pneumonia.

Kali Iod.—Syphilitic children, with enlarged glands; swelling of the bones; hard lumps on the head, decaying teeth; tearing, darting pains in the legs and arms; great emaciation; fretfulness and irritability.

A dose of the indicated remedy every three hours. If the child is breast fed, and the mother's milk poor, get a wet nurse, or if the baby is over five or six months old, try feeding with sterilized milk and barley water, or peptonized milk; give ten or twelve drops of cod liver oil once or twice a day avoid patent foods; the expressed juice of raw beef, strained chicken and mutton broth, the white of egg, and, if the child is over a year old, a small quantity of finely scraped raw beef may be given to advantage. Fresh air, sunshine, sponge baths, light weight woolen underwear, freedom from dampness are essential. Do not let the child walk, and do not handle him more than is necessary. Deformities should be treated early by a good surgeon.

Marasmus.—*Extreme Emaciation.*

This also is a disease due to faulty nutrition, and characterized by a steady loss in weight, great debility, drumstick legs, and claw-like hands; the face is pinched and old; eyes large and prominent; skin wrinkled; vomiting excited by the slightest cause, and there are skin eruptions or sore mouth; complete loss of appetite.

The remedies and general directions given under "Rickets" are adapted to this disease, but two or three drugs may be mentioned in addition.

Arsenicum.—Undigested stools, and diarrhœa or vomiting he minute the child begins to eat or drink, worse after midnight; rapid emaciation; skin harsh and dry, and often yellowish and tawny; much restlessness and moving about as if in distress; constant thirst, but drinking little; bad cases where child looks like a mummy, and stomach symptoms are very marked.

China.—Child much exhausted by vomiting and diarrhœa, and becomes drowsy; coldness of the face and body; belching of gas.

Antimonium Crud.—Fretfulness, crying when washed or touched; or lies quiet and pays no attention to anything; mouth sore; white coated tongue; nausea and vomiting; much sweating; first diarrhœa, then constipation. A dose of the indicated remedy every three hours.

Worms.

Tape worms are found more often in adults than in children, the latter being most subject to pin or thread worms, occurring in little balls in the rectum, or round worms, which multiply in the small intestine; are reddish brown and four or five inches long.

Worms may be suspected when there are the following symptoms: loss of appetite or ravenous hunger; disturbed sleep; great restlessness; picking at the nose; bad breath; lassitude; dark circles round the eyes; indigestion; straining at stool.

China.—Pin worms, with picking at the nose; canine hunger, or variable appetite; hard, distended abdomen; mucous stools, often mixed with worms; colicky pains in the bowels; great itching of the anus; milky urine, often passed involuntarily at night; livid circles about the eyes; restlessness, and grinding of the teeth in sleep. A dose three times a day.

Teucrium, 1 x.—Pin worms, with much irritation and itching of the anus; picking at the nose; offensive breath; capricious appetite; straining at stool; colicky pains in the abdomen; disturbed sleep. Give as above.

Santonine.—Symptoms similar to the teucrium when round worms are suspected. One or two doses morning and night for adults or half a grain for children.

Mecurius Cor.—Slimy, tenacious, mucous stools, with pain and distended, hard abdomen; excessive secretion of saliva. A dose morning and evening for a week. This remedy corrects the condition of the bowels favoring the development of worms.

Should the above mentioned remedies not prove effective, three to fifteen grain doses of *Naphthalin*, repeated three times a day will be found serviceable. The fluid extract of *Spigel a* in one to two drachm doses is also a good vermifuge. One of the best remedies is pumpkin seed. Take the fresh seeds, hull them, beat to a paste with powdered sugar, and dilute with milk. Two doses fasting may be taken, and follow with half an ounce of castor oil.

When a child has pin worms apply lard or petroleum to the anus daily, and insert within the folds of the rectum. All underdone vegetables and meats, especially pork, pastry, sweets and stimulants should be avoided, and salt used freely.

Diseases of Women.

Chlorosis.—*Green Sickness.*

At puberty, or the age when the girl becomes a woman, delicate or excessively nervous children, or those living under bad hygienic conditions, or studying too hard, may develop a condition called chlorosis, characterized by impoverishment of the blood; greenish pallor of the skin; palpitation; headache; indigestion; nosebleed; irritability; an appetite for chalk, slate pencils, etc.

Ferrum.—Great pallor of the face, with occasional sudden red flushes, with dizziness; palpitation of the heart; neuralgia of the stomach; chilliness; headache; feverishness towards night; absence of the menses, or when the flow is established it is too profuse.

Pulsatilla.—Suppression of or scanty menses; girls of a mild, gentle, tearful disposition, chilliness; feels uncomfortable in a warm room, better in the open air; tremulousness; may be drawing, tearing, shifting pains, worse at night, with sleeplessness.

Before using Homeopathic Medicines read pages 681 to 684.

Sulphur.—Rush of blood to the head, with cold feet; pressive headache in the morning; loss of appetite, with feeling of fullness in the stomach after eating a little; constipation; oppression of the chest; palpitation, especially at night; frequent flushes of heat; night sweats and great prostration and weakness.

Calcarea Carb.—Scrofulous cases, with tendency to obesity and enlargement of the glands; morbid craving for chalk, pickles, etc., acidity of the stomach; the girl takes cold easily, and tires readily.

Also *Phosphorus* in debility following too rapid growth, masturbation or depressing mental influences; great weakness and prostration; palpitation; night sweats. *Graphites.* Scanty menstruation; dry, harsh, rough skin; constipation; acrid leucorrhea. Consult the remedies under "St. Vitus' Dance" when there are pronounced nervous symptoms.

A dose of the indicated remedy three times a day. Fresh air, sunshine, exercise, early retiring, simple nourishing food, physical and mental rest, salt water baths, pleasant surroundings, cheerful companionship, normal action of the bowels, proper clothing, and freedom from excitement are essentials in the treatment of these cases.

Inflammation of the Vulva and Vagina.

The lining membrane of the external genitals called the vulva, is continuous with that of the passage leading to the uterus, known as the vagina. It is a mucous membrane resembling the lining membrane of the throat, and like the throat subject to inflammation and catarrh, the latter being the result of the former. Inflammation of the vulva or vagina may be due to germs, irritating discharges, lack of cleanliness; worms, masturbation; sexual excesses or to irritation from the urine in diabetes. There is dryness, heat, redness, itching, swelling of the parts, followed by a watery and later by a creamy discharge. The latter is called leucorrhea or the whites.

Aconite.—Vulva or vagina dry, hot and sensitive. *Belladonna* may be given when, in addition to the above symptoms, there is a bearing-down feeling as if the organs in the pelvis were being forced from the vulva; swelling of the external genitals; fever and headache; pains worse on motion.

Cantharis.—Swelling and irritation of the vulva; violent itching in the vagina; inflammation of the urethra, and difficulty in passing urine.

Also *Mercurius cor.*—Thin, watery, blood-tinged discharge; intense inflammation of the external parts. *Kreosotum.*—Soreness, smarting and swelling of the external parts which are hot and hard; itching in the vagina; yellow, offensive, acrid discharge; burning on passing water. *Sepia.*—Great dryness of the vulva and vagina, which are painful to the touch; itching eruption on the vulva, with redness and swelling; much weight and bearing down in the lower abdomen (pelvis); yellow, milky, excoriating discharge, and especially before the menstrual flow. A dose of the indicated remedy every two hours in acute cases, three times a day in chronic. Consult the remedies given under "Leucorrhea."

The cause of the inflammation must be sought and removed. In cases due to gonorrhea, treatment under the care of a competent physician should be at once instituted. Absolute cleanliness is necessary, and in simple inflammation a douche of tepid water one to four times a day, should be followed by a medicated douche. For a raw, excoriated surface, two to four teaspoonfuls of fluid extract of calendula to a pint of tepid water; when there is a profuse secretion, partly mucous, partly purulent, substitute hydrastis; when itching is very trying and there is biting and smarting or an offensive discharge, use ten to thirty drops of kreosotum to a pint of water. The external genitals should be dried and soft pieces of old cotton or linen on which vaseline, calendula or hammamelis cerate had been spread, should be placed between the labia to prevent irritation when walking; or dust on powdered corn starch or calendulated boracic acid if there is no discharge, but only heat and burning. Abstain from sexual intercourse; eat unstimulating food; take daily baths; keep the bowels open, and live out of doors.

Leucorrhea.—*Whites.*

LEUCORRHEA is a catarrhal discharge from the lining mucous membrane of the vagina, neck or body of the uterus, due to want of cleanliness, sexual excesses, gonorrhea or syphilis, inflammation of the organs of generation, new growths, general debility, or may occur in the course of other diseases. This discharge may be slight or profuse; thin, glairy, thick, lumpy, or stringy; watery, milky, yellowish, greenish, bloody, or purulent; odorless or very offensive; bland or excoriating and accompanied by heat, burning and intense itching of the genitals. There may be no pain, but lassitude, indigestion, headache, dizziness, faintness, nervousness, or hysteria.

Pulsatilla.—Thick, white or creamy discharge, especially in cases of delayed or scanty monthly flow; the external parts swollen, but painless; indigestion; nausea; chilliness; frequent, profuse flow of urine.

Calcarea Carb.—Profuse, milk-like, or yellowish discharge; monthly flow too early and profuse; soreness and swelling of the vulva; scrofulous or debilitated women, very sensitive to cold, with constant cold, damp feet; acid stomach.

Hydrastis.—Yellow, sticky discharge, often offensive and with shreds of mucus or membrane in it; chronic cases, especially in those having liver or stomach trouble.

Sepia.—Pressure and bearing down in the lower abdomen; stinging pains in the ovaries; discharge thick, creamy, yellowish, may be bland or excoriating; leucorrhea especially before the monthly flow, during pregnancy, or at the change of life.

Alumina.—Profuse, yellow, acrid, corroding discharge, with burning in the genital organs, the parts being corroded and inflamed; worse before and after the monthly flow; sluggish bowels, and scanty movements, passed with difficulty.

Also *Helonias* when there is a whitish discharge, with white particles in it; heat, itching and swelling; dragging in the uterus; great debility and prostration; melancholy; especially for nursing mothers or after any great strain on the system. *China* and *Ferrum* are both serviceable remedies in leucorrhea in women much debilitated and run down, with impoverished blood and indigestion. A dose of the indicated remedy three times a day.

The general directions under "Inflammation of the Vulva and Vagina" should be followed. In addition to the recommendations for douches, may be mentioned the use of boracic acid, one even tablespoonful to a quart of hot water, or plain cold water. Never use a bulb syringe, but a fountain syringe, and always lie down to take a vaginal douche.

Displacement of the Uterus.

THE uterus swings free in the pelvis, that is, it has no bony attachments, but is supported by ligaments. It is therefore easily tipped or bent out of its normal position, or may sag downward as in "falling of the womb." A few of the commonest causes of displacements are falls or jumping, lifting heavy weights, constipation and straining at stool, excessive exercise, standing constantly, tight clothing, letting the bladder remain full, general debility, tumors and child-bearing. Local treatment under the care of a skilled physician should always be instituted in connection with the use of remedies. The latter will be most effective in the early treatment of displacements due to injuries or child-bearing, and in recent cases in those who will abstain from sexual intercourse. The general condition of the patient must always be taken into account.

Nux Vom.—Sensation of pressing down toward the genitals, especially in the morning; monthly flow dark, and too early and profuse, with nausea, chilliness and attacks of faintness; constipation, indigestion.

Sulphur.—The general symptoms are important, such as heat on the top of the head, with cold feet; burning of the soles of the feet, and cramps in the calves of the legs and soles of the feet at night; also thick, dark excoriating monthly flow, too late, too profuse and too brief, with burning in the vagina and stomach.

Sepia.—Falling of the womb, with bearing down and strong pressure in the pelvic organs; vagina hot, dry, and painful to the touch; hot flushes; irritability of the bladder; bearing down sensations, better on lying down, worse on sitting up, and especially when walking.

Belladonna.—Recent displacements, with great local congestion, and pressure downward as if everything would fall out; back aches as if broken; burning, throbbing, cutting pains in the pelvis; monthly flow too early, and too profuse, or thick, dark and offensive.

Also *Ferrum* in cases where there is great debility, with impoverished blood; head congested, face fiery red; flatulence and no appetite; feeling of pressure on the chest. A dose of the indicated remedy three times a day.

Inflammation of the Uterus.

THERE are many different names for inflammations of the uterus, depending on the location, and the tissues involved. It is difficult for anyone but a physician to distinguish clearly between the different parts affected, in any event it is the symptoms as a whole that are to be considered and prescribed for. In metritis there is inflammation of the body of the uterus; in endometritis and endocervicitis of the lining membrane of the uterus and neck of the uterus.

These diseases may be acute or chronic, and are caused by infection during or after labor, abortion, or operations; gonorrhea; exposure to wet or cold during menstruation; sexual excesses; the extension of inflammation from nearby organs; uterine tumors, displacements or tuberculosis.

Inflammation of the neck of the uterus may be followed by ulceration; and of the body of the uterus, when occurring in childbed, by puerperal fever and peritonitis. Leucorrhea is a common symptom in endometritis, and treatment is given under that section. Consult also the section on "Child-bed Fever" for remedies for acute inflammation of the body of the uterus. In all inflammations *Aconite, Belladonna* and *Veratrum vir.* are generally called for.

Nux Vom.—A frequently indicated remedy with bruised pain in the neck of the uterus; frequent desire to urinate, with pain, scalding and burning; constipation; frequent and ineffectual urging to stool; much pain in the small of the back; headache, fullness and pressure on the forehead; pain and distention in the abdomen, symptoms worse after 3 P. M.

Sulphur.—Chronic cases that get better for awhile under the indicated remedy, then cease to improve; also when there are frequent flushes of heat, passing off in a little perspiration and faintness; heat on the top of the head; feet burn; "cat naps" at night weak, faint spells frequently during the day; may be yellow, excoriating leucorrhea.

Before using Homeopathic Medicines read pages 681 to 684.

Mercurius Cor.—Ulceration of the neck of the womb, especially in cases due to syphilis or gonorrhea; profuse greenish, yellow, or purulent discharge; smarting and itching of the vagina; easy perspiration; much sensitiveness to draughts of air.

Hydrastis, Calcarea carb. and **Sepia** should be referred to under "Leucorrhea," also secale under "Profuse Flow of Blood from the Uterus." A dose of the indicated remedy three times a day.

Local treatment is generally indispensable in these cases. Good hygiene; rest in bed during the monthly flow; perfect cleanliness; sitz baths; copious hot water vaginal douches (see "Leucorrhea"), simple nourishing food, absolute sexual rest, and perseverance in treatment are essential. During acute attacks of abdominal pain, hot water compresses sprinkled with turpentine, and frequently changed, will give much relief.

Inflammation of the Ovaries.

Pus germs, or the germs of gonorrhea or tuberculosis may cause inflammation of the ovaries which may be acute or chronic. In an acute attack there is fever, rapid pulse, agonizing pain in the region of the ovary, extreme sensitiveness on pressure; and if treatment does not arrest inflammation, pus forms, and life itself is endangered. In chronic inflammation there is constant pain, especially before and after the monthly flow, on having a movement of the bowels, and from any sudden jolt or jar. The monthly flow is profuse, prolonged, and painful, and changes occur in the structure of the ovary.

Aconite.—Early in acute cases with fever, restlessness, cutting, darting pains; the abdomen hot and sensitive to touch; painful urging to urinate; especially inflammation following sudden suppression of the monthly flow from cold.

Belladonna.—Acute stage; face and head much congested; throbbing in the arteries of the neck and abdomen; severe clutching, clawing, stabbing or throbbing pains in region of the ovaries, especially on the right side, with great local sensitiveness; cannot bear the least jar; high fever and thirst. The leading remedy in acute cases whether mild or severe.

Bryonia.—Cases of moderate severity in rheumatic women, with stitching pains, worse on coughing, deep breathing or motion; shooting pains extending to the hips; tongue coated white.

Cantharis.—Stitching, pinching pains in the ovaries; difficult urination; frequent urging to pass water; bloody urine; violent pains in the bladder.

Apis.—Acute or chronic cases, especially in the right side; burning, stinging pains worse at time of monthly flow; urging to urinate; scanty urine and swelling of the feet.

Also *Macrotin* in hysterical or rheumatic cases, in the latter when rheumatism seems to shift to the ovaries; shooting pains, with bearing down sensation; irregular, delayed or suppressed monthly flow; great nervousness at that time, and pains under the breasts. *Conium.* Chronic cases; hardening and enlargement of the ovaries, with cutting pains; soreness and swelling of the breasts before the monthly flow, which is scanty or absent; acrid leucorrhea causing burning; sour stomach and pain in the stomach. *Pulsatilla.*—Suppression of the menstrual flow, with nausea, chilliness, pressure on the bladder and rectum; violent pains making patient cry. A dose of the indicated remedy every hour in acute cases, every three or four hours in chronic. Consult the remedies under "Painful Menstruation," "Profuse Flow of Blood from the Uterus," and "Cessation of Menstruation."

In acute cases while there is fever and much inflammation the diet should be liquid; hot douches should be given frequently; hot hop-bag, hot water bag, dry hot bran-bag, hot compresses wet with hamamelis and water, frequently changed, may be applied to the abdomen. Rest in bed is essential in all cases, especially during menstruation; the bowels must be kept open, and sexual excitement of any kind avoided.

Painful Menstruation.—*Dysmenorrhea.*

PAINFUL menstruation may be neuralgic or ovarian, or due to inflammation of the uterus, the casting off of the inner membrane or obstruction by small growths, contraction of the passages, congestion from getting the feet cold or wet, mental shock, the result of heavy clothes, lacing and many less frequent causes.

Vibernum, 1 x.—Spasmodic dysmenorrhea; excruciating, colicky pains in the lower part of the abdomen, coming on suddenly, preceding the monthly flow, lasting for hours; bearing down and aching, and much nervousness.

Cimicifuga.—Severe pains in the back, down thighs and through the hips; hysteric spasms, cramps, and tenderness of the lower part of the abdomen; dysmenorrhea in rheumatic cases.

Caulophyllum.—Spasmodic dysmenorrhea; bearing down pains; normal or scanty flow, in patients subject to rheumatism of the small joints; sympathetic spasms of the bladder, rectum, or bowels.

Belladonna.—Paroxysms of severe, dragging, pressing pains in the pelvis from six to twenty-four hours before menstruation; the flow bright red, too early and profuse; inflammation of the ovaries; face red and bloated.

Chamomilla.—Neuralgic dysmenorrhea; drawing pain from the lower part of the back forward; griping, pinching, labor-like pains in the uterus, followed by discharge of large clots of blood; excessive irritability and impatience; frequent desire to urinate.

Also *Cocculus* in menstrual colic from gas in the intestines; distention of the abdomen; sharp, cramp-like pains; headache and nausea as in seasickness; scanty, irregular, painful flow.

Xanthoxylum.—The flow too early and profuse, with pains from the ovaries down the front of the thighs; nervous, easily startled hysterical women; neuralgic dysmenorrhea; headache and full feeling in head. Consult the remedies under "Absence of the Menses, and "Profuse Flow of Blood from the Uterus," especially *Pulsatilla.*

The indicated remedy should be given every fifteen minutes to one hour while the symptoms are acute during the monthly flow, and three times a day between the periods. Hot applications to the abdomen and spine, and rest, preferably in bed, are indicated. The following are important recommendations: Avoid late hours; tea, coffee and alcohol; violent exercise, wet or damp feet; tight, insufficient or too heavy clothing, or thin-soled boots; dancing while menstruating; sexual excesses at all times. Eat simple, nourishing food; bathe daily; take moderate out of door exercise; secure good ventilation; be amiable.

Absence or Suppression of the Menses.—*Amenorrhea.*

THE menstrual flow may be suppressed from various causes, the most common ones, perhaps, being getting chilled or wet. Cold baths, sea bathing, acute and chronic diseases, checked perspiration, a sea voyage, mental shock, tuberculosis, hemorrhages, pregnancy, lactation, and sexual excesses, occasion absence of the menses or amenorrhea, as it is called.

The resulting symptoms, in addition to lassitude, general debility, throbbing headache and indigestion, may be pain in the abdomen and small of the back, constipation, nervousness, nausea and lack of appetite. Vicarious menstruation, *i.e.*, hemorrhage from the nose or spitting blood, may occur when the menses are absent.

Pulsatilla.—Delayed, suppressed or scanty; hysterical symptoms; nausea and vomiting; palpitation of the heart; loss of appetite; lassitude, chilliness; headache; pain in abdomen or loins. A dose every two hours.

Cimicifuga.—Headache, nervousness, sometimes hysteria; pain in left breast and side; rheumatic tendency; neuralgia of the uterus, pains dart from side to side; the flow irregular, delayed or suppressed from mental emotions.

Calcarea Carb.—Delayed menstruation in scrofulous girls, who are fleshy, lack muscle, have a fair complexion, perspire easily about the head, have cold, damp feet, and are of a consumptive tendency.

Aconite.—This is an invaluable remedy for sudden suppression of the menstrual flow from a chill, fright or vexation, with congestion of the head or chest, anxiety and great restlessness, especially in full-blooded young women.

Also *Ferrum.*—Delayed appearance of first menses, with debility, languor, palpitation, indigestion, leucorrhea, sickly complexion, puffiness of the face or ankles. *Graphites.*—Delayed or tardy menstruation with scanty, pale flow; constipation; tendency to skin eruptions. *Belladonna.*—In very full-blooded persons, with pressure and throbbing in the head; much bearing down in the lower abdomen; nosebleed.

A dose of the indicated remedy every two or three hours during menstruation or when the menses are due; three times a day in the interval between periods. Consult the recommendations under "Painful Menstruation." Build up the general health if there is debility with nourishing food, milk, cocoa, malt extracts, cod liver oil, an outdoor life, and otherwise good hygiene. Hot foot baths or hot sitz baths are recommended, also mental as well as physical rest. In delayed appearance of the menses in young girls, leave them alone as long as they seem perfectly well, and let them live out of doors and hygienically. Never hesitate to consult a physician when there is ill health. Change of climate is often beneficial, also electricity.

Profuse Flow of Blood from the Uterus.—*Menorrhagia and Metrorrhagia.*

The first of these long names is applied to too profuse flow of blood at the monthly periods; the second, to discharge of blood between the menstrual periods. Common causes of metrorrhagia are tumors and growths of the uterus, retention of the placenta after abortion, inflammations of the uterus; and of menorrhagia, general debility, heart disease, other diseases such as malaria or congestion of the liver, and incipient tuberculosis.

The remedy, whatever the cause, must be chosen in accordance with the majority of the symptoms; and whatever remedies are used, the most important part of the treatment is the removal of the cause of the condition whenever possible.

Calcarea Carb.—Too early and profuse menstruation, lasting too long, in scrofulous women, or where there is poor nutrition, and much debility; milk-like leucorrhea, with itching and burning; feet feel cold and damp; profuse monthly flow in nursing women. *Calcarea Phos.*—May be substituted, for young girls having frequent attacks of headache, and too frequent and too profuse menses.

Trillium.— "Bleeders" who menstruate every fortnight, the flow lasting six or seven days, blood bright red at first, then pale; yellowish leucorrhea during the interval.

Nux Vomica.—Too soon, too long and too profuse; stops for a day or two, then returns; irritability; nausea in the morning, with chilliness, attacks of faintness, and pressure towards the genitals; sedentary habits.

Belladonna.—Much congestion; blood bright red; pressive pains in the abdomen; face flushed and bloated; flow too early and profuse.

China.—Excessive flow, followed by much exhaustion, headache and ringing in the ears; heaviness of the head; weak pulse; fainting; twitching of the muscles; cold extremities; after great loss of blood.

Crocus.—Dark, stringy blood in black clots, worse from least motion; earthy yellow face; debility and palpitation; especially in young women.

Ipecac.—After labor or miscarriage; continuous flow of bright red blood; the patient is cold and pale; also when monthly flow is too early, profuse and of bright red blood, which clots readily.

Also *Secale* in hemorrhage from uterus following abortions or labor, when the uterus does not contract; uninterrupted flow of dark blood; worse from motion; also in inflammation of the uterus with profuse flow. A dose of the indicated remedy every two hours, or every fifteen minutes in hemorrhage following labor or abortions.

A careful examination of the uterus should be made by a skillful physician, that the cause of the trouble may be removed if possible. Surgical interference may be necessary. Rest in bed should be taken at the monthly periods when the flow is profuse. Live hygienically, and take a generous, nourishing diet including milk and eggs. A hot water bag to the spine is recommended. Six quart douches at a temperature of 115° may be taken twice a day; to the last quart a tablespoonful of powdered alum may be added. All local treatment, however, is best undertaken under a physician's direction. Sleep on a firm mattress, with light coverings; take a daily cold salt water sponge, avoid over-exertion, lifting anything heavy, tight clothing, excessive emotion, especially worry.

Cessation of Menstruation.—*Climacteric.*

Between the ages of forty and fifty, most frequently about the age of forty-five the menstrual flow occurs less often and diminishes in amount, finally ceasing altogether. This is the normal, physiological change in women denoting the close of that period of her life during which she should be able to bear children.

A profound readjustment of the nervous system takes place which goes on even after menstruation ceases. When the process is not normal, many complications may develop, such as cancer, inflammation of the uterus, fibroid and other tumors, derangements of the nervous system, obesity, etc.

It is very advantageous for a woman to be under the observation of a good physician during the change of life. Under the best of conditions there are many annoying symptoms which homœopathic remedies will greatly relieve; these symptoms are mentioned below.

Cimicifuga.—Restless and unhappy state of mind; the patient feels grieved and troubled, is irritable and cannot sleep; sinking sensation in the stomach; pain in left side; fullness and dull aching in top of head.

Lachesis.—Hot "flushes;" burning sensation on top of head; profuse flowing; fainting spells; vertigo; flatulence; may be pain and tenderness in left ovary; patient nervous, anxious, and talkative.

Sanguinaria.—Change of life in women who flow profusely; vertigo, rush of blood to the head, with buzzing in the ears, and flushes of heat; headache in paroxysms, beginning in the back of the head, passing over the right eye; headache with nausea and chilliness, sometimes bilious vomiting; better in the open air, from lying down and from sleeping; acrid, bad-smelling leucorrhea.

Sepia.—Palpitation of the heart, in evening, in bed with beating of all the arteries, also during digestion; flushes of heat at night as well as in daytime; much prostration and faintness in the morning during menses; pain in the small of the back when walking; irritability; darting pains in head from left eye backward; derangements of the liver and stomach; liver spots on the skin and yellow saddle across the nose.

Gelsemium.—Headache with rush of blood to the head; heaviness, fullness and dizziness; dimness of sight; drowsiness; bruised feeling and throbbing in the head; may be nausea and vomiting; uterine neuralgia.

Also *Amyl Nitrite* for the hot flushes not relieved by *Lachesis;* much throbbing in the ears, intense fullness in the head, choking, constricted feeling in the throat. *Coffea* or *Passiflora* are indicated in cases where there is marked nervous excitement, with sleeplessness owing to great activity of the mind, and alertness of all the senses. A dose of the indicated remedy three times a day.

Every effort should be made to favor the normal action of the principal organs of the body, the skin, stomach, liver, bowels, kidneys, heart, etc. Frequent warm baths are highly beneficial; much fresh air and moderate exercise are necessary; a simple, rather abstemious diet is recommended; loose clothing; no excitement; early hours; restraint of all passions, and the avoidance of stimulants.

Any noticeable increase in the frequency or amount of the menstrual flow is good and sufficient reason for immediately consulting a physician; malignant or other disease may be present, and if so, it is of the highest importance that early treatment be instituted. It cannot be too strongly emphasized that the time for a woman to prepare for a normal climacteric is through all her menstrual life, especially by avoiding wet or damp feet, excitement and overexertion during the monthly flow, and by pure and temperate living at all times.

Labor.—Parturition.—*Morning Sickness and Other Ailments.*

Among the derangements of the system during pregnancy, none is more common than nausea and vomiting, or morning sickness so-called, because these symptoms appear most frequently on first rising in the morning. With some women this difficulty lasts but a few weeks; in others, for several months. The distress may be slight or severe, sometimes threatening life itself, as in the form known as "Pernicious Vomiting."

Arsenicum.—Vomiting after eating or drinking, with faintness and excessive prostration; much thirst for small quantities of water, vomiting as soon as taken; very pale, white look; uneasiness and restlessness.

Cocculus.—Intense nausea; scarcely able to get up in the morning; yellow-coated tongue, with aversion to food; worse from driving or being on the water.

Nux Vom.—Sickness every morning; bitter, sour risings; vomiting of sour mucus and food; excessive nausea with feeling as if vomiting would relieve; great depression of spirits; constipation; neuralgia of the stomach, with cramp-like pains.

Ipecac.—Constant nausea, never any let up; vomiting of bilious matter, undigested food, and large quantities of mucus; disgust fo food; empty retching; pinching pains in the pit of the stomach diarrhœa; neuralgia of the stomach with nausea.

Pulsatilla.—Especially when vomiting comes on in the evening or night; capricious appetite, longing for beer, acids, wine, etc.; nothing tastes good; absence of thirst; loss of taste, or bitter, fatty, sour or saltish taste; eructations.

Sepia.—Feeling of emptiness in the pit of the stomach; aversion to meat; nausea in the morning; bitter, saltish taste in the mouth; constipation; eructations tasting like bad eggs; disgust for all kinds of food; vomiting of food and bile.

Cuprum.—Violent vomiting of frothy mucus, sometimes green, relieved by drinking cold water; intense coppery taste; profuse salivation.

Phosphorus.—Sour eructations and sour vomiting; very weak feeling in the abdomen; constipation, with narrow, long, hard, dry feces, or profuse watery diarrhœa; patient sleepy all the time.

Also *Sulphur.* — Profuse salivation, the taste of which causes nausea and vomiting; flashes of heat; cold feet; "cat naps" at night; aversion to meat; feels full after eating a little; ravenous hunger or complete loss of appetite. *Colchicum.*—Excessive nausea caused by the smell of food; extreme aversion to the odor or mention of food.

A dose of the indicated remedy may be given three or four times a day. It will be noticed that these remedies cover the annoying symptoms of aversion to food, neuralgia of the stomach, acidity, constipation, diarrhœa, and the excessive secretion of saliva. Other ailments of pregnancy, such as sleeplessness, debility, neuralgia, headache, leucorrhea, itching of the skin, varicose veins, hysteria, etc., have been discussed at length previously, and should be consulted for the treatment. Additional remedies for the other conditions will be found under the appropriate headings such as "Constipation," "Diarrhœa," "Indigestion," etc.

Careful regulation of the diet; bathing and exercise; the avoidance of worry, excitement, sexual intercourse, tight clothing and late hours form essential parts of the treatment.

False Pains.

As pregnancy nears its close, many women are troubled with false labor pains which often mislead them into thinking that labor has begun, or is about to begin. The strain on the abdominal muscles and other tissues may cause them, or rheumatism or irritation elsewhere as constipation, indigestion, etc. False pains are generally constant, and when they are not, return at irregular intervals; may be feeble one time, and strong another, then feeble again. True labor pains occur at regular intervals, increase in strength, and cause the uterus to contract forcibly.

Caulophyllum.—A most helpful remedy for spasmodic pains in various portions of the abdomen below the stomach; irregular pains, flying in all directions.

Cimicifuga.—Especially in hysterical women or those subject to rheumatism; pains in the lower abdomen shooting from side to side; nausea; sleeplessness.

Nux Vom.—Pains in those used to rich or highly spiced food, stimulants, or a life lacking sufficient exercise; constipation; pain in the back preventing turning over in bed, and making the sufferer get up and walk about; worse about 4 A. M.

Also *Atropia* for neuralgic pains, appearing and ceasing suddenly; worse from the slightest jar, back feels as if it would break. *Pulsatilla.*—Pain in the ovaries, especially at night; a close, warm room feels very oppressive; patient wants to walk about after sitting a short time, and craves cool air. A dose of the indicated remedy every one or two hours.

Hot fomentations of hamamelis to the abdomen are very soothing, also belladonna or hamamelis cerate gently rubbed into the abdominal muscles. Lying down in a perfectly quiet room is beneficial to nervous patients. Noise, confusion and excitement should be avoided.

After-Pains.

When the child is delivered the uterus should, and generally does, contract promptly. By this means the after-birth and clots are expelled, hemorrhage is prevented, and the return of the uterus to its usual size hastened. Sometimes the contractions of the uterus causes much pain, and there is also always some soreness of other muscles concerned in the expulsion of the child. These after-conditions are greatly relieved by the appropriate remedy. After-pains do not cause a rise of temperature, rapid pulse, and distention and tenderness of the abdomen, thus distinguishing them from inflammation of the peritoneum which does.

Arnica.—Unless some other remedy is plainly indicated *Arnica* should be given immediately after labor to prevent pains, and relieve the sore, bruised feeling in the muscles. A drop of the tincture in a teaspoonful of water every half hour to one or two hours.

Caulophyllum.—Especially suitable after protracted and exhausting labor, with spasmodic pains across the lower part of the abdomen extending into the groins. Give as above, but should not be administered in cases where there is much flow of blood.

Pulsatilla.—After pains too long, or too violent, or causing faintness, pains worse towards evening, in mild, tearful women; symptoms better if the room is cool. A dose every one or two hours.

Nux Vom.—Aching pains which cause frequent desire for movement of the bowels, with feeling of something in the rectum; soreness in the uterus so that there is a dread of being moved or touched for any purpose; irritability; patient wants to be well covered and have the room warm. Give as above.

Also *Belladonna* when the pains are of a severe, forcing character as if everything would be forced out of the vigina; pains that come and go suddenly; the least jar of the bed distresses patient greatly. A dose every half hour to one or two hours. *Gelsemium* is also highly recommended.

In case clots are retained in the uterus, pressure with the hand over that organ will favor their expulsion. Hot applications of arnica in water are soothing. Half a teaspoonful of calendula tincture to half a pint of hot water injected in that passage, and sterile gauze wet with the same may be applied to the vulva.

Difficult Urination.

After labor there may be retention of urine or difficulty in urinating. The tendency to this condition can be lessened by encouraging a woman to make water as often as she has the slightest inclination before labor. The bladder will then not require to be emptied for several hours, during which the normal control of it may be regained.

Hyoscyamus.—Nervousness and irritability; desire to urinate, but bladder seems to be paralyzed.

Belladonna.—Retention of urine, or great difficulty in passing even a small quantity of urine; sensitiveness of the bladder to pressure, and pain on being jarred or moved.

Other remedies may be consulted under "Retention of Urine." A dose of the indicated remedy every half hour.

While it may be necessary to draw off the urine by a catheter, this should be avoided if possible. Pouring warm water over the genitals may start the flow of urine, or the sound of water running from a faucet or poured from a pitcher may stimulate the action of the bladder. A woman should make one or two attempts at least to urinate within the first six or eight hours after delivery, as a greatly distended bladder renders evacuation of its contents more difficult.

Sore Nipples.

Friction of the child's mouth in nursing, the softening action of the milk on the skin, or exposure to cold while the nipples are moist or warm not infrequently causes soreness, abrasions, cracks or at least sensitiveness of the nipples. These conditions should receive prompt attention otherwise ulceration may result, and even abscesses form.

Agaricus.—Much itching and burning of the nipples which look very red; especially for women with the above symptoms who are subject to chilblains.

Graphites.—The nipples seem to have little vesicles on them which ooze a thick, glutinous fluid, forming acrust, or are painful, inflamed, cracked.

Mercurius Viv.—The nipples feel very *raw* and *sore;* the glands in the neck are enlarged; the gums sensitive, and the teeth sore.

Phytolacca.—Sore and fissured nipples, with intense suffering on putting the child to the breast; pain seems to start from the nipple and radiate over the whole body.

Also in the very first days of nursing give *Arnica* if the nipples feel sore and bruised. *Calcarea Carb.*—Ulceration of the nipples, and discharge of pus, especially in fair, fleshy women, who perspire easily. *Sepia.*—Deep, very sore cracks and cracks across the crown of the nipples. A dose of the indicated remedy every two hours.

Prevention is an essential part of treatment, and proper care of the nipples during the last months of pregnancy will do much to save subsequent discomfort. Pressure of the corsets or clothing must be avoided; during the last month or two apply frequently alcohol and water equal parts, with ten per cent. of alum added; draw out flat nipples daily.

During nursing wash the child's mouth with boracic acid solution; wash the nipples with calendula and water after every nursing, and dry thoroughly. When there are slight cracks, apply hydrastis powder or a solution of alum or tannin; excoriations may be painted with compound tincture of benzoin; deep cracks touched with one to five per cent. nitrate of silver, then covered with a film of absorbent cotton sealed with collodion. *Always wash off any preparation before giving the child the breast.* A rubber shield may be used to protect the nipples.

Inflammation of the Breast.—Broken Breasts.—*Mastitis.*

Inflammation of the breasts is commoner in blondes than brunettes, and occurs in five to six per cent. of nursing women. "Poor health" is a predisposing cause, also congestion of the milk glands, and excoriations of the surface allowing infection by bacteria or germs. The inflammation may be superficial or involve the deeper structures of the breast. In severe cases chill, high temperature, and pain are marked symptoms, as well as heat, tenderness, pain, swelling, hardness and even suppuration in the affected breast.

Bryonia.—Breasts heavy, hot, hard and painful, but not very red; breasts gorged with milk; stitching, drawing pains; patient feels sick on sitting up even in bed; great thirst for large quantities of water; lips rough and dry; constipation, with dry, burnt looking stools.

Belladonna.—Heavy, swollen, hot and painful breasts, with red streaks running like the spokes of a wheel from a central point; tearing pains; fever; waking suddenly or starting up in sleep.

Phytolacca.—Chill; fever; marked hardness and sensitiveness of the breast from the beginning; nipples tender; caked breast; hard, painful lumps in the breasts; pain during nursing extending from the breast throughout the body.

Hepar Sulph.—When pus forms; sharp stitching pains; breast very sensitive to touch; faintness from pain; free perspiration without relief.

Mercurius Viv.—Breasts swollen, hard and painful; feel sore and raw; the milk is poor, and baby refuses to nurse; soreness of the teeth, gums and tongue.

Also *Phosphorus* in inflammation with night sweats; breasts red in spots or streaks, with hard lumps; small openings with watery, offensive, ichorous discharge. *Silicea.*—Ulcers that constantly discharge and refuse to heal; the substance of the breast seems to be discharged with the matter formed. A dose of the indicated remedy every one to three hours.

As soon as hardness appears or any sign of swelling or heaviness the breast should be supported by a bandage. Too much milk may be withdrawn by the breast pump or massage; hardness relieved by massaging with olive oil, stroking toward the nipple. Hot fomentations of flannel wet in phytolacca tincture and hot water, a drachm to a pint, or antiphlogistine warm, will relieve inflammation. To prevent engorgement of one breast, the child should nurse from both. The general health must receive attention.

Milk Fever.

WITHIN the first two or three days after labor the secretion of milk in the breasts is established, and often with some constitutional symptoms such as feverishness, increase in the pulse rate, general sense of discomfort, more or less distention of the breasts. This condition is known as milk fever, and quickly subsides in normal cases with the free flow of the milk.

Aconite may be given in the beginning for the feverishness, or *Bryonia* when the milk is secreted slowly, and the breasts seem much engorged, with a tendency to inflame. As a rule no other remedies will be required, but *Pulsatilla*, *Asafoetida*, *Belladonna*, or *Calcarea Carb.*, may be called for, the indications for these remedies being given under "Scanty or Excessive Secretion of Milk."

Scanty or Excessive Secretion of Milk.

Too little milk may be due to excessive nervousness, grief or fright, or to poor nutrition of the mother. Attempts to increase the flow of milk should not include the resort to alcoholic stimulants, but should be directed to improving the general health by an abundance of simple, nourishing food, especially milk, and by good hygiene, plenty of sleep, fresh air, etc.

Too much milk may be due to excessive activity of the digestive functions in robust women of great vitality, or may equally occur in "run down" women. In the latter case the milk is poor, thin, and will not nourish the child. Excessive lactation often occurs when nursing is prolonged unduly, and when conception takes place while a woman is still nursing her baby. Headache, vertigo, insomnia, debility, emaciation, etc., result.

Calcarea Carb.—Poor milk, although profuse in quantity in fair, fleshy or flabby women; also scanty milk supply in women of the same type, inclined to too frequent and profuse menstruation, and with cold, damp extremities.

Pulsatilla.—Often called for when there is too little milk in mild, tearful women apparently in good health, or when the milk is profuse, thin and watery; feverishness but no thirst; fatty, rich food disagrees; the patient craves cool air.

Belladonna.—Scanty milk supply; breasts large and heavy; headache; eyes red; face flushed; no sound sleep, but a half-waking, half-sleeping condition.

Sulphur.—Excessive secretion of milk in poorly nourished, low-spirited women, who complain of frequent weak faint spells.

Also *China.*—Scanty milk in women who have lost much blood, or who are greatly debilitated, with flatulence, indigestion, dizziness, and ringing in the ears. *Asafoetida.*—Excessive sensibility and nervousness; sometimes hysteria; lack of milk, although breasts are enlarged, and veins distended. A dose of the indicated remedy every three hours.

As has already been said, the general nutrition must be improved when there is a scanty milk supply; a strong decoction of the castor oil plant, applied warm to the breasts seems to stimulate the secretion of the milk. Excessive secretion of milk also calls for attention to the general health. When the milk is of poor quality the child must have a wet nurse or be weaned. A moderately firm bandage put on over absorbent cotton, should be applied to the affected breast to secure compression and give support.

Bleeding After Labor.—*Post-Partum Hemorrhage.*

WHILE it may be reasonably assumed that the average woman in labor will have the attendance of a physician, it is by no means uncommon for a woman to give birth to a child without having medical aid. Serious hemorrhage following labor is fortunately not the rule, but the exception, nevertheless when such an emergency arises the attendant must be prepared to act promptly and effectively.

The local treatment recommended is of the greatest importance, but should be supplemented by internal medication which will prevent a recurrence of excessive flowing.

Ipecac, 3 x.—Constant flow of bright red blood; cutting pains about the navel; constant nausea and vomiting; the patient feels cold; is very pale; gasps for breath; complains of dizziness and headache; every effort to vomit causes blood to flow with a gush. The leading remedy.

China.—The uterus does not contract; flow not so bright as that calling for ipecac, but very profuse; also paroxysmal discharge of clots of dark blood; coldness and blueness of the skin; yawning; faintness; dizziness; ringing in the ears.

Secale.—Hemorrhage of dark blood in debilitated women; slightest motion aggravates the flow; strong contractions of the uterus, every gush of blood being preceded by a contraction or by bearing down pains; patient prostrated, and takes little note of her condition.

Sabina.—Dark blood, with blackish clots, mixed with watery blood; painless loss of blood after miscarriage or normal labor; pain in small of back extending round to the lower part of the abdomen; uterus does not contract. To be thought of when ipecac is not indicated.

See also *Trillium* and *Belladonna* under "Profuse Flow of Blood from the Uterus." A dose of the indicated remedy every ten minutes to one hour.

The bone above the external genitals is called the pubic bone or the pubes. Above this will be felt the uterus, and by placing the hand on it after labor, muscular contractions should be felt. When the uterus is relaxed, however, and bleeding is going on, grasp it firmly with the right hand, with a sort of kneading pressure. This will aid it to contract and expel blood clots, etc. Dip the hand first in cold water if there is time. If there are clots in the vagina, gently insert the other hand and remove them. The following directions should also be followed: remove pillows from under the patient's head; lift up the foot of the bed two or three inches and rest it in chairs; put cloths wrung out in ice water over the abdomen and change them frequently; if bleeding persists, push a lump of ice the size of a hen's egg well up in the vagina, or if ice is not at hand, fill a bulb syringe with vinegar and inject it into the vagina, or give a copious hot douche, two or three quarts with a fountain syringe, temperature 115° to 120°, *determined by a bath thermometer*. Putting the child to the breast frequently stimulates contraction of the uterus. Perchloride of iron, one ounce to ten ounces of water, may be used as a final resource, to be given after the hot water douche.

Child-Bed Fever.—*Puerperal Fever.*

The introduction of septic germs into the wounds of the birth canal during or after labor causes a dangerous condition known as puerperal fever. The hands of the physician or nurse, unclean instruments or cloths most frequently convey this infection. The disease is described at length earlier in the book. The most conspicuous early symptoms are chill, free perspiration, rapid pulse of 100 to 140; rise of temperature, 102 to 104 degrees; often bad-smelling lochia, as the discharge from the uterus is called, and pain in and tenderness of lower abdomen.

Aconite.—Chill, followed by high fever, with hot, dry skin; quick, hard pulse; mouth and tongue dry; great thirst; may be vomiting; urine scanty, red and hot; cutting, burning, shooting pains in the lower abdomen, which is hot to the touch, and very sensitive to slightest pressure.

Veratrum Vir.—Give early when there is nausea and violent vomiting, with empty retching; much congestion of the head; full, hard pulse; may be substituted for *Aconite.*

Belladonna.—Intense congestion; rush of blood to the face and head; painful retching and vomiting; abdomen so sore, sensitive and painful the weight of the bedclothes cannot be borne or the slightest jar or motion; vaginal discharge suppressed; painful bearing down in the pelvis; eyes red; throbbing headache and delirium.

Bryonia.—Peritonitis, with stitching, cutting pains in abdomen, worse from slightest motion; lochia suppressed; great thirst; cutting pains in the stomach, with distention, and sensitiveness to pressure.

Arsenicum.—Sudden sinking of strength; cold, clammy perspiration; constant thirst and vomiting; diarrhœa; burning pain in the abdomen; great anguish and restlessness; rapid prostration. A dose every half hour.

Veratrum Album.—Serious cases, sudden and rapid in their development and with threatened collapse and speedy death; violent vomiting and diarrhœa; suppressed lochia; icy cold extremities; face pale, sunken, cold· cold perspiration. A dose every fifteen minutes to one hour.

Consult the remedies in the section on "Inflammation of the Uterus." A dose of the indicated remedy every one or two hours unless otherwise specified. The local treatment is outlined on page 409, but these cases require the service of a competent physician whenever obtainable.

Suppression of the Lochia.

THE lochia are the genital discharges which follow labor, are more or less bloody for four or five days, and contain shreds of tissue, then become more watery, and finally creamy like an ordinary vaginal discharge. The lochia last from two to four weeks in normal cases.

From some disturbance of the system the lochia may be suppressed, or become offensive, with general symptoms showing that an abnormal condition exists. Prompt treatment is desirable, also when the discharge continues so long as to affect the general health.

Aconite.—Suppression of the lochia; or a too scanty discharge, occurring soon after confinement, with distress in the abdomen, chest and head; feverishness, with thirst; much uneasiness, anxiety, and restlessness; suppression from fright.

Belladonna.—Offensive lochia which feel hot in passing; flushed face; pain in the uterus, and great sensitiveness to touch or any jar; drowsiness, but no sound sleep; bad dreams; may be delirium.

Bryonia.—Suppression of the lochia, with sensation as if the head would burst; worse from the slightest motion; thirst for large quantities of water at a time; mouth and lips very dry.

Nux Vom.—Scanty and offensive lochia in women accustomed to highly seasoned food, coffee and wine, with constipation; irritability of the bladder.

Pulsatilla.—Scanty or suppressed lochia with failure of milk in the breasts; feverishness, but no thirst.

Also *Calcarea carb.* when the lochial discharge is milky, and lasts too long in women who ordinarily menstruate profusely.

Rhus Tox.—Thin, offensive, ichorous, persistent lochia causing much exhaustion; shooting pains up the rectum; much restlessness at night. *Cimicifuga.*—Suppression of the lochia from cold or emotion. *Colocynth.*—Suppression from anger; suppression with violent colic.

A dose of the indicated remedy every three hours. The vagina should be cleansed twice or three times a day by hot water douche, see section on "Leucorrhea."

Milk Leg.—*Phlegmasia Alba Dolens.*

Two or more weeks after delivery, there may be pain and swelling in one of the lower limbs preceded by a chill. The cause may be an extension of the inflammation from around the uterus through the lymphatics, or some clot in the pelvic veins. Whatever the cause, which is not always discoverable, the limb becomes swollen, tense, hard, white, glistening, and the veins distended like hard, irregular cords, with frequently a lumpy feel. An abscess or gangrene may follow.

Aconite.—Fever; high temperature; rapid pulse; restlessness; much thirst.

Belladonna.—Cutting pains, or sharp, shooting pains, aggravated by the least jar or motion; fever with burning thirst; throbbing of the arteries in the neck; eyes bloodshot.

Pulsatilla.—Pale swelling in the foot and limb; supression of milk; *no thirst;* bad taste in the mouth, especially after sleeping, the sufferer craves fresh, cool air.

Hamamelis.—Inflammation of the veins about the uterus, extending to the veins of the leg.

Also *Arsenicum* when there is much pale swelling; burning pains; great restlessness, every motion causing a feeling of exhaustion; thirst for frequent sips of cold water. A dose of the indicated remedy every one or two hours.

The leg should be kept at rest in a horizontal position, and elevated on cushions so as to be slightly higher than the thigh. Hot applications of hamamelis and water should be made, covered with absorbent cotton and oiled silk, or apply ichthyol and glycerine, 1 to 4, twice a day. Not until inflammation has wholly subsided should massage be given or a bandage or elastic stocking used. The latter is then advisable until all swelling has disappeared. Keep the bowels open, and drink plenty of soft water.

Surgical Diseases

Concussion of the Brain

CONCUSSION is a sudden interruption of the functions of the brain owing to a blow or other mechanical injury. It is more than probable that in most cases of concussion injury is received by the brain tissue. Slight concussion may cause the patient to lose his balance and fall, become pallid, confused, and giddy, possibly be nauseated and vomit, but after a period of rest he will gradually recover. In more severe injury the injured person will fall and lie quietly, the heart's action will be feeble and fluttering, the skin cold and clammy and unconsciousness ensue, from which he can be at least partially aroused as a rule; urine and feces may be discharged involuntarily, sometimes convulsions ensue. Returning consciousness, which usually takes place within twenty-four hours, is generally accompanied by vomiting; but stupor, called coma, or meningitis may occur, or eventually abscess of the brain, epilepsy, or insanity.

Arnica.—This remedy takes the first rank in concussion of the brain, as it seems to act directly upon the lacerated brain tissue and ruptured blood vessels; there is aching, soreness, vertigo and nausea if the patient is conscious; in unconsciousness the feces and urine may be passed involuntarily. A dose every hour.

Opium.—The injured person is in a profound stupor, but can be aroused for a moment by being spoken to in a loud tone of voice, then relapses into his former condition; extremities and face bluish or livid; loud, labored respiration, and coldness of the skin. Give as above.

Camphor.—When opium fails, and there are signs of collapse; cold hands and feet; cold, clammy sweat; trembling tongue, and trembling of the hands when raised; retention of the urine; weak pulse. A dose every fifteen minutes to one hour.

Put the patient in bed as soon as possible, without any pillow; surround him with hot water bags, taking precautions against possible burns; apply mustard plasters to the calves of the legs; do not give alcoholic stimulants, but if a stimulant is necessary a ten drop dose of aromatic spirits of ammonia in water.

Severe jars of any kind or a hard blow on the head may produce very serious injury. At first there is only a general bruised feeling and lameness, but often this does not wholly pass away or else returns whenever the person is tired, and there may be trembling of the limbs, general prostration, and often the eyes look somewhat dull and sunken.

It will prevent much future trouble in these cases if, when no injury to the bones of the spine or any organ is discoverable, *Hypericum* in five or ten drop doses of the tincture is administered at once, twice or three times a day.

When there is any local inflammation or congestion, as may happen when concussion is from a blow, *Arnica* may be given.

Rest, treatment by electricity or massage are helpful in these cases when the symptoms show a tendency to become chronic.

Sprains and Strains.

In a sprain there is a sudden wrench or twist of the tendons or ligaments, with frequently complete or incomplete rupture of some of their fibres. A strain may be more or less severe, and affect the muscles in any part of the body. A sprain may be complicated by a fracture or dislocation; generally a broken bone can be detected by touch, but when there is a fracture in the ankle of the articulating surface of one of the ankle bones it cannot be discovered by touch. This explains many cases of stiff joints after sprains.

The pain of a strain is instant and severe, and often attended by faintness; then follows swelling, with discoloration later on and weakness and stiffness on the part. Often the patient cannot bear any weight on the injured limb for several days, or even move it, without pain.

Arnica.—Recent sprains or strains, with a bruised appearance and bruised, sore feeling; swelling and puffiness.

Rhus Tox.—When the tendons are injured; especially when the joints feel stiff and paralyzed, either from sprains, over-lifting or over-stretching; lameness, stiffness and pain on first moving after rest, better on continued motion; trembling in the limbs.

Before using Homeopathic Medicines read pages 681 to 684.

Calendula.—In place of *Arnica*, for patients peculiarly sensitive to the latter drug, and in whom it causes skin eruptions.

Ruta.—Lameness after sprains, especially of the wrists and ankles; fluid in the joints due to strains; especially after sprains and strains in persons subject to rheumatism. A dose every three hours.

A dose of the indicated remedy every one or two hours. Immerse the injured part in water as hot as can be borne for half an hour, then apply gauze or cheese cloth wet in arnica or calendula tincture, cover with absorbent cotton and bandage firmly, exerting an even pressure. When it is impossible to keep the injured limb at rest, splints should be applied, or the joint strapped with straps of adhesive plaster. After swelling and inflammation subside, massage with arnica or calendula oil is highly beneficial, and friction and passive motion of the parts to prevent stiffening of the joint. While inflammation and swelling continue, the limb should be elevated. Use cold salt water baths with friction for a weak back or weak ankles; bandaging the latter may be required for support.

Fractures and Dislocations.

After the reduction of a dislocation, and to alleviate pain and soreness, compresses wet with arnica or calendula tincture and water, one to ten, may be applied. *Arnica* may be given internally, or when fever and restlessness follow the breaking or dislocation of bones, *Aconite* will prove serviceable.

There are two remedies very helpful when the ends of broken bones are slow in uniting, one of these is *Calcarea phos.* especially suited to fair, fleshy persons of a lymphatic temperament, and to those of a scrofulous tendency; there is no formation of new bone cells or tissue about the ends of the bones. *Symphytum* is another excellent remedy, especially in fracture of the knee pan or of the thigh bone, or where some disturbance of nerve nutrition or of the nervous system is the apparent cause of lack of union.

Although the subject of fractures and dislocations is ably discussed elsewhere, emphasis is again laid on the important point that a person with a broken arm or leg should not be moved without some support being given to the injured member. If there is no board or similar substitute to which the broken limb can be fastened, bind a leg to its fellow, or place an arm in a sling. A fracture where the soft parts and large blood vessels are uninjured, may often be made a complicated one by carelessness in moving the patient.

Wounds.

A clean-cut wound is termed incised; one made by some pointed instrument, punctured; one with ragged edges, lacerated; one caused by bruising the parts as with a blunt instrument, with little or no abrasion of the surface, contused.

Aconite.—High fever; full, rapid pulse; restlessness and anxiety following injuries, and accompanied by inflammation of the parts. It takes the place of the old method of "bleeding" and is far superior to it in relieving congestion.

Calendula.—Torn, ragged wounds, or when a portion of the flesh has been torn away; to prevent suppuration, and hasten healing.

Arnica.—Bruises; black and blue spots; contused wounds, with effusion of blood to the surface; bruised sore feeling; injuries where clots form; congested or black eyes, etc.

Hypericum.—Punctured or crushed wounds; gunshot wounds; crushed finger or lacerated wounds of the fingers or toes; severe, constant pain indicating injury to the nerves; also a preventive of lockjaw in wounds of the sole of the foot or palm of the hand as from a nail.

A dose of the indicated remedy every one to three hours. A slight cut chould be washed in cold water, and a small piece of calendulated court plaster applied when the bleeding ceases. If bleeding continues, use styptic cotton.

Deeper cuts should be washed clean with gauze or soft cotton cloth freely wet with some antiseptic such as listerine and water, one part of the former to four or five of the latter, or bichloride of mercury 1 to 2,000, and narrow strips of adhesive plaster applied to hold the lips of the wound together; cover with a pad of styptic or absorbent cotton, and bandage firmly. In changing a dressing, soften the old one with an antiseptic wash; remove gently, and make an entirely fresh application.

In case of a wound made by a rusty nail, encourage bleeding by placing the injured part in warm water; dress with a pad of lint or gauze wet with ten or fifteen drops calendula or hypericum tincture to an ounce of water, and bandage.

Bleeding from Wounds.—*Hemorrhage.*

BLEEDING from wounds requires prompt local treatment. *Arnica* or *Calendula* may be given internally, but no remedy given in this way lessens the necessity for immediate attention to the wound itself. After there has been excessive hemorrhage *China* is recommended as an admirable remedy for the debility, faintness, dizziness and nausea caused by the loss of blood.

Bleeding from a vein can be checked by a stream of cold or very hot water; by ice, pressure, and elevating the part. *Blood from a vein is dark, and flows steadily; blood from an artery is bright red, and* *spurts out in jets.* In the latter case, lose no time. If a limb is injured, grasp it firmly above the wound, *i.e.*, on the side nearest the heart; apply at this point a knotted handkerchief, or a strong strip of cloth, bringing the knot over the artery. To tighten this improvised tourniquet, insert a stick in the knot and twist it about, once or twice. Summon surgical aid. Water at 120° F. is of great value on bleeding surfaces. Powdered alum or tannin will also arrest bleeding.

Contusions.—*Bruises.*

Bruises may often prove very painful, and a blow on a portion of the body but slightly protected by soft tissues, such as the skin, may injure the bone itself, and set up an inflammation in the tissues covering it. Cold applications may be made to an ordinary contusion, and if possible before any discoloration takes place. To ice cold water add one-tenth the amount of tincture of arnica or calendula, or use as a lotion a solution of chloride of ammonium, five grains, to one ounce of alcohol. Extract of witch hazel, as hamamelis is popularly called, is soothing and healing. Do not make ice cold applications to very severe contusions as there is danger of deadening the skin; hot applications are better, and the lotion mentioned above. Do not allow wet compresses to become dry.

A blow on the breast does not cause cancer as many persons suppose, but it does render the tissues susceptible to degenerative changes so that abscesses or tumors may develop. Compresses wet with tincture of conium and water, the same strength as arnica lotion, should be applied. This is a valuable remedy taken internally in swelling, soreness and pain in the breasts, and when hard lumps form.

A kick or blow on the shin should be promptly treated, and when the bone feels sore, *Ruta* should be taken internally, and applied externally also.

Injury to a Nerve.

There are several injuries a nerve may sustain that will call for special treatment. A nerve may be divided by wounds; lacerated in fractures; compressed by dislocations, tumors, new growths of bone tissue where the ends of a broken bone are uniting, or by faulty postures. It is of great importance to find out the cause of inflammation of a nerve, because unless that is removed no remedy can be expected to cure the condition.

Arnica.—In simple injury, especially at an early stage, and when in the nature of a bruise or compression. A dose every two hours.

Hypericum.—In chronic cases or cases due to lacerated wounds, with intolerable excruciating pain showing that the nerves are severely injured, or after punctured or crushed wounds, or in acute pain after surgical operations, especially amputations, when no easing of the dressings seems to give any relief.

Arnica, hypericum or calendula tincture may be applied as a lotion externally, twenty drops to half a cupful of water, in connection with the use of the same remedy internally. Calendula externally should be substituted for arnica in torn, ragged wounds.

Shock.

After bad accidents, falls, wounds, fright, or following surgical operations, shock to the nervous system is a common and dangerous condition. The symptoms are those given in the indications for the following remedies. Those for *Aconite* will be found under "Burns and Scalds."

Veratrum Album.—Face cold and sunken; cold sweat on the face, and all over the body; pulse rapid or slow; feeble, irregular, intermittent, hardly to be felt.

Carbo Veg.—Face blue, body cold, especially below the knees to the feet; cold sweat on the limbs; pulse intermittent and thready.

Camphor.—Sudden and rapid prostration, with tendency to collapse from shock; icy coldness of the body; very weak pulse.

If there is bleeding from a wound it should be arrested, as directed under "Wounds." The patient should be covered with blankets; the head kept low; hot water bottles or hot bricks placed near the body, care being taken to avoid burns; a small quantity of whiskey or brandy given by mouth if the patient can swallow, or hot black coffee, or twenty drops of aromatic spirits of ammonia, or strychnia 1-50 grain. Subcutaneous injections are absorbed more rapidly.

Bites and Stings of Insects.

The best remedy to use both internally and externally is ledum, especially for mosquito bites, a drop of the tincture in a teaspoonful of water every half hour internally; one part tincture to ten parts water externally. If there is much puffiness and swelling, with persistent itching, try *Apis*.

Remove the sting if possible. This may generally be accomplished by pressure with a key, the hollow barrel of which should be placed over the sting. Apply lint or absorbent cotton soaked in ledum or ammonia. If nothing else is at hand, cover the bite with a piece of raw onion, or wet fresh clay or earth. Oil of pennyroyal or spirits of camphor rubbed on the face and hands will often drive away mosquitos.

Before using Homeopathic Medicines read pages 681 to 684.

Wry Neck.—*Torticollis.*

From exposure to draughts or damp weather, the muscles of one side of the neck may contract rheumatism, and become hard, rigid, very painful on motion, and sensitive to touch; the head may be drawn to one side. This condition is rheumatic torticollis, and there are other forms, one existing at birth when there is shortening of the muscles on that side of the neck, and others due to diseases of the nervous system, injury to the parts, etc. The treatment suggested is chiefly for rheumatic torticollis.

Aconite.—From a draught or chill; tearing pains in the nape of neck, extending to shoulder, worse on motion; especially for recent cases.

Bryonia.—Painful, stiff neck, worse from touch or motion, in rheumatic subjects or in damp weather.

Cimicifuga.—Fixed, voluntary position of the head; rheumatic pain and stiffness in muscles of neck and back; sensitiveness of spine.

Dulcamara.—From damp, cold, and wet; pain in the nape of the neck, as after lying with the head in an uncomfortable position.

A dose of any of the above mentioned remedies every one or two hours. Also *Gelsemium* in wry neck, with muscular pains from the spine to the head and shoulders; bruised sensation; congestion of the spine; prostration and languor. *Strychnia Phos.*—Nervous cases, with much debility, impoverished blood, and digestive disturbances. A dose three times a day.

In rheumatic torticollis, wear a flannel about the neck; running a hot iron over several layers of flannel is beneficial, or friction using a lotion made of equal parts of capsicum and glycerine.

Goitre.—*Bronchocele.*

Goitre is an enlargement of the thyroid gland in the neck not dependent upon inflammation of malignant formations. The tumor that forms may be on one or both sides, is not painful or tender, and varies in size under different bodily conditions. The disease occurs more often in women than in men, and in localities where the water is impregnated with lime salts. Breathing and swallowing may be interfered with in some cases.

Iodine.—Recent and soft goitres especially. This is the leading remedy, and the affected part may be painted with the tincture.

Spongia.—Thyroid gland swollen and hard with suffocative attacks at night.

Also in goitre in syphilitic persons *Mercurius Iod.* or *Kali Iod.* will be found useful. A dose of the indicated remedy two or three times a day, and its use persisted in for months. Galvanism has benefited many cases in young persons. Boiled or soft water should be drunk. Surgical interference may be called for, or injections of iodine, or the introduction of the electric needle.

Hernia or Rupture.

The different forms of hernia are described at length earlier in the book, with the treatment commonly resorted to by skillful practitioners of all schools. Medicines are of secondary importance in these cases, and local treatment should never be neglected. There is always the danger that a simple protrusion of the bowel may become irreducible, and strangulation and even gangrene take place. Internal remedies are helpful in infantile hernia, and in cases where there is constriction due to inflammation or spasmodic contraction of the muscles.

Aconite.—Strangulated hernia; inflammation, with burning pain in the affected part; v miting of bile; great anxiety and cold sweat.

Belladonna.—Intense local inflammation, the tumor being exceedingly sensitive to the touch.

Nux Vom.—Feeling of weakness in the abdomen on rising in the morning; constipation; strangulation, with vomiting or nausea, or both; indications of approaching gangrene with green or yellowish-green spots on the tumor.

Also Plumbum when *Belladonna* and *Nux* have failed to relieve the above symptoms, and there is intense pain.

It may be emphasized that attempts at reduction of a hernia should always be gentle, not continued more than fifteen minutes, and never made if gangrene is suspected; also that the part of the intestine that came out last is to be reduced first. A well fitting truss should always be applied to even a rupture that gives no discomfort. Men who are stout, or whose work is very laborious, and who have any weakness of the abdominal walls, should wear an elastic abdominal band or belt.

Inflammation of the Joints.—*Synovitis and Arthritis.*

Inflammation may attack only the lining membrane of the joint cavity, the synovial membrane, or it may affect the bone, these parts having the most blood vessels which, in inflammation, become highly congested. A strain, a wound, or exposure to cold may be the exciting cause of inflammation, while gout, rheumatism, syphilis or tuberculosis frequently precede joint disease.

In simple acute cases there is redness, heat, pain on motion of the affected joint, a hard swelling which later on becomes filled with synovial fluid; the latter contains material that may form bands of fibrous matter which will make the joint stiff. An acute attack may pass into the chronic form, especially in gouty or rheumatic persons.

In infective cases, as in rheumatic and gouty arthritis, the condition is more serious, for suppuration may take place, intense pain and tenderness, adhesions and deposits form, and even after acute symptoms subside, the joints remain swollen, enlarged and misshapen.

Arnica.—To be given at once after any injury to a joint, and a weak lotion of the tincture to be applied externally.

Aconite.—Acute cases, with moderate swelling, much redness and heat, pricking pain, high fever, with great restlessness.

Belladonna.—Joints bright red and swollen; cutting, drawing pain, skin very hot to the touch; great sensitiveness to touch or pressure, but can bear firm pressure better than light touch; high fever.

Bryonia.—Joints pale red, swollen, stiff, with stitching pains on the slightest motion; effusion of fluid; follows well after the preceding remedies. *Apis* may be given instead of *Bryonia* in scrofulous persons, with sharp, stinging pains, effusion, and much pale swelling of the joints.

Pulsatilla.—Erratic, shifting, tearing pains in the joints, and nearby parts, relieved by pressure, and generally better from cold.

Also *Iodine* or *Calcarea Carb.*—In cases of scrofulous makeup, tending to become chronic. *Sulphur* following the remedies given above to hasten absorption of the fluid in the joints.

Rest in bed is necessary, and keeping the affected joint quiet. Apply a flannel bandage, exerting moderately firm pressure. If there is a great deal of effusion, the fluid may have to be drawn off by an aspirator needle, and carbolic acid or boracic acid solution injected. Painting the joint with iodine or ichthyol will be beneficial.

White Swelling.—*Tubercular Arthritis.*

Infection of the joints by the tubercle bacillus may take place at any age, but is most common in young people. There is dull pain, worse by motion or jarring; tenderness on pressure; more or less swelling, and exudation of fluid; the joint grows rigid, the muscles above and below waste away, the skin becomes white and shining.

Calcarea Phos.—This is a valuable remedy in these cases, with crawling, tingling pains; progressive emaciation, weakness, and debility; symptoms better from rest and lying down; the swelling is white and waxy, and has a boggy or putty-like feel.

Silicea.—White swelling, with suppuration, and openings into the joint discharging pus or thin, offensive matter.

Also *Sulphur* in long lasting cases, which make no progress; sticking, drawing pains in the joints; cramp-like pains in the legs. *Mercurius.*—Especially in cases where there is a syphilitic taint, with tendency to complete destruction of the joint; aching, stabbing pains, worse at night and from warmth; free perspiration which does not relieve the pain. A dose of the indicated remedy three times a day, and its use persisted in.

The constitutional treatment is of the greatest importance in these cases. The system must be built up by an abundance of simple, nourishing food, cod liver oil, the malt extracts and hypophosphites; life out of doors must be sought; good ventilation indoors; bodily cleanliness, and warmth. The local treatment required is frequently surgical.

Burns and Scalds.

Aconite.—A valuable remedy immediately after bad or extensive burns, when there is intense restlessness, anxiety and fear of dying from the injury; the pulse being hard and frequent.

Cantharis.—Superficial burns, and when there is superficial ulceration; burns with great redness of the skin as in erysipelas; spasms in children after being burnt.

Urtica Urens.—Superficial burns, with intense burning, biting and crawling sensations.

Rhus Tox.—Deeper burns and scalds, causing many blisters, with tendency to matterate.

A dose of the indicated remedy every half hour to one or two hours. Superficial burns or scalds, in which the effect of the heat has extended only to the superficial layer of the skin, may be treated by the application of soft cotton cloth or absorbent cotton saturated with a solution of bicarbonate of soda, one drachm to one ounce of water, or with tincture of urtica urens one part to twenty parts water. A thick paste made of bicarbonate of soda and olive oil is an excellent application. Blisters may be evacuated by using a needle, which should first be cleansed in boiling water or the flame of a lamp, then allowed to cool. When pus forms, cleanse the surface with peroxide of hydrogen; iodoform or boracic acid may afterwards be used as a dressing. Calendula water and calendula oil are among the best healing applications. Consult the section on "Shock" for further remedies and treatment for the general condition.

Caries.—Necrosis.—*Death of Bone.*

In caries the bone dies cell by cell; in necrosis the bone dies as a whole, that is a considerable portion of its structure softens, swells, and mortifies. In ulceration or death of the bone an abscess forms and opens on the surface, discharging pus or other offensive matter. The treatment is chiefly surgical, but remedies are of great service in improving the constitutional condition.

Silicea.—Sticking, burning pains; then offensive ichorous discharge; much proud flesh; abscess openings which do not heal; discharge of particles of dead bone; hard lumps following suppuration.

Arnica.—Bruised, sore pain in the bones, skin red, hot, and swollen, tender and sore on pressure; better from warmth; disease of the bone following a fall or blow; should be given early.

Also *Aurum* with inflammation and ulceration of the bones; horribly offensive discharge; syphilitic cases. *Calcarea Phos.*—Ulceration of bones in fair, flabby persons of a scrofulous constitution.

Mercurius Viv.—Constant aching in the bones, sweating and exhaustion; swelling of the bones; abscess in the joints.

A dose of the indicated remedy three times a day. Surgical advice must be sought in these cases. Rest, drainage and the removal of diseased tissue are essential.

Bed Sores.

Bed sores are due to pressure, especially on a bony portion of the body, generally from lying much in one position. The skin grows red, and if pressure is not relieved there will be increasing congestion and eventually ulceration. The principal remedy to be taken internally is *Arsenicum.* The symptoms of bad cases may be found under "Gangrene" for both *Arsenicum* and *Lachesis.*

Preventive measures are highly important. In order to prevent bed sores, tuck the bottom sheet in tightly on all sides; keep it smooth and free from wrinkles and crumbs. Bathe the parts night and morning, where pressure comes, with equal parts of alcohol and water; dry the skin thoroughly, dust on a little powdered starch. If the surface shows much redness, or signs of breaking down, use boric acid or calendula in powdered form, instead of starch.

Remove pressure by frequently changing the patient's position; by rubber rings, and other air cushions and pillows. Never permit a patient to lie on a feather bed if it can by any means be avoided. Cleanse a bad bed sore with peroxide of hydrogen or use as a wash fluid extract of calendula, a teaspoonful to half a pint of water previously boiled. Sterilized gauze may be used as a dressing.

Gangrene.—*Mortification.*

Gangrene or death of the soft tissues, may be moist or dry, the latter being due to arterial disease where the supply of blood to the part is cut off, the skin shrivels, becomes pale, white, semi-translucent, with specks of a bluish mottled hue, then grows opaque, dark, and mummified. Dry gangrene is most often seen in the aged, or in thin, scrawny, emaciated persons, or those having syphilis or scrofula.

With moist gangrene there is always more or less decomposition; the part is engorged with blood from some obstruction to circulation; the skin is dark and livid, the tissues soften and break down. This condition may occur in diseases of the heart or kidneys, during fevers, after injuries or surgical operations, long continued intemperance, privation, etc., also from pressure as in bed sores, extreme cold. The whole system is affected in cases of gangrene, as will be seen from the symptoms mentioned in connection with the remedies.

Arsenicum.—When the invasion of the disease is sudden, and particularly in dry gangrene in old persons; much burning pain, felt even during sleep, with great and increasing prostration; also in extreme cases with impending collapse, diarrhœa and sweating; anxiety; much thirst, but drinks little; pulse small and thready.

Lachesis.—Great putridity of the diseased part; bloody, putrid, thin discharge; patient's system saturated, as it were, with the poison; pulse irregular and weak; skin cold; temperature may fall below normal (which is 98.5°); torpor or delirium; gangrenous part black, foul, blistered.

Secale Cor.—Painless, dry, chronic gangrene; gangrenous part cold, bluish, and may be blistered; numbness of the limbs; debility and restlessness; particularly useful in tall, scrawny women, without muscular development or who are feeble and bloodless.

A dose of the indicated remedy every three hours. The patient should stay in bed and receive all the concentrated nourishment he can digest, broths, milk, egg nogg, meat juice, coffee and egg, raw eggs, soft boiled or poached eggs, scraped beef, etc. The affected part should be kept at an even temperature; powdered willow charcoal may be used in superficial cases. The services of a good surgeon should be secured. As a wash, use peroxide of hydrogen, or bichloride of mercury 1 to 5,000. In severe cases moist corrosive sublimate gauze or moist iodoform gauze may be used as a dressing; dressings should never be too moist, or allowed to remain many hours without being changed.

Bunions.

A BUNION often becomes not only large, but also sensitive and painful. Well fitting, easy shoes and stockings not too small are necessary. Surgical interference may be necessary. Compresses wet with calendula may be applied at night, covered with absorbent cotton or oiled silk, and held in place by a light bandage.

Before using Homeopathic Medicines read pages 681 to 684.

Antimonium Crud.—Skin hard, horny, smooth, and slightly discolored; pricking sensations in the part, or no feeling at all; often callous spots on the soles of the feet, sensitive on walking; the nails split or grow out of shape.

Apis.—Inflamed bunions, which seem to fluctuate under the fingers; biting, stinging sensations; the skin thin and reddened.

Arsenicum.—Dark color, generally bluish, with much fluid in the part, and intense burning; better from warm applications.

Silicea.—Hard, bony enlargement; sticking pains or much itching; feet smell bad; ingrowing toe nails; may be offensive foot sweat.

Sulphur.—Feet burn but are cold to the touch; patient wants to keep them uncovered; hard or soft inflamed bunions, with crawling sensations; aching, sticking pains in the toes.

Diseases of the General System and Miscellaneous Diseases.

Asiatic Cholera.—*Epidemic Cholera.*

THIS germ disease is well described on page 362. The symptoms to be especially emphasized as characteristic are vomiting alternating with painless diarrhœa, the stools becoming like rice water, and very frequent and sudden; excruciating cramps in the calves of the legs and abdomen with knotting of the muscles; the face grows old as if by magic, pinched, blue, and sunken; the tongue cold and bluish; the eyes glassy; pulse thready and weak; voice hoarse; skin of a clammy coldness; then comes a partial or complete cessation of vomiting, an entire collapse of the vital forces, and death. Recovery, however, may and often does take place, and under no treatment more frequently than the intelligent and prompt use of homœopathic remedies.

Camphor.—Early in the attack; immediate prostration; body cold; voice husky; face pinched and blue; skin shriveled; anguish and distress at the pit of the stomach, and burning in the bowels; watery diarrhœa, sometimes slight; may be some vomiting. Two or three drops in sugar every five or ten minutes, at the same time rubbing camphor on the neck, chest and abdomen until reaction takes place.

Veratrum Alb.—Cases marked by excessive vomiting and purging, with violent abdominal pains; eyes sunken, with blue rings around them; cold sweat on the forehead, very profuse, flaky, frequent, rice-water evacuations; violent colic, especially about the navel. Five drops of the tincture every fifteen minutes, increasing the intervals as patient improves.

Arsenicum.—Sudden and great prostration; anguish; violent thirst, with vomiting of least quantity of liquid; difficult breathing; burning in stomach; pulse small and vanishing; burning distress in the region of the stomach; collapse. Give as above.

Cuprum.—Coldness and blueness of the skin; cramps of the muscles of the legs and thighs; unconsciousness; gurgling in throat, stomach and bowels; cessation of diarrhœa. Give as above.

Also when the patient is extremely ill, and fails to respond to the above remedies give *Carbo Veg.* if the body is cold; skin bluish; breath cool; cold sweat on limbs; thready pulse frequently losing a beat, *Hydrocyanic Acid* 3x, with practically no pulse; respiration slow, deep and gasping, taking place at long intervals. A dose every five or ten minutes.

The patient must be placed in a warm bed, and surrounded by hot water bottles, or hot bricks, flat irons or even stove lids wrapped in flannel. Rub the body and especially the extremities with hot flannel, rubbing toward the heart; give hot milk by rectal injections, but nothing by mouth except ice, champagne or lemonade; have the room warm but well ventilated.

During convalescence the return to a solid diet must be very gradual; begin with milk, thin gruels, and strained broths; no solid food until the stools are no longer liquid, and begin to look natural.

Disinfect all the stools or vomited matter with carbolic acid solution one to twenty; boil all soiled clothing, if it is not first soaked in a disinfectant; keep the patient's dishes, etc., separate. The attendant should disinfect his hands frequently, and two or three times a day take drop doses of *Camphor*.

The prevention of cholera includes the use of boiled drinking water; avoidance of uncooked fruits or vegetables; absolute cleanliness of person, house, yards and streets; good drainage; clean and covered cesspools; regular habits; the avoidance of all stimulants, overwork, worry, or exposure in chilly, damp weather, or to night air or crowds.

Typhoid Fever.

Although typhoid fever occurs in all countries and in all climates, it is more common in the temperate zones, and in the summer and autumn, being frequently called "Autumnal fever." It is contracted by taking into the system the typhoid bacillus or germ; this has a great vitality, and lives for months in the ground, in water or in a cake of ice, and multiples rapidly in milk. More men are affected than women, and in the young the disease usually runs a shorter course.

In the beginning there is slight headache, chilliness, languor, thirst, loss of appetite, constipation, and often nosebleed, sometimes diarrhœa. A few days later fever develops, and pulse and temperature increase a little every day; the skin is hot and dry; thirst and ill-feelings increase, and the abdomen becomes more or less disturbed and is sensitive to pressure. Successive crops of rose-colored spots, like flea-bites, appear on the abdomen, beginning about the eighth day; inflammation of patches in the bowels leads to ulceration, and may cause death of the tissues, perforation of the intestines, peritonitis, hemorrhage and death, or death may result from pneumonia. In bad cases there is loud muttering delirium, with picking at the bed clothes; the teeth and gums are covered with a brown, sticky deposit called sordes.

Bryonia.—Early in the disease debility, languor, loss of appetite; tongue coated white; wandering pains in the limbs; dry, burning heat; also later in the disease when there is great thirst; dryness of the mouth; distended abdomen sensitive to pressure; dark colored urine; shooting pains in the chest, with cough; hurried, labored respiration; apathy; drowsiness; picking of the bed clothes.

Baptisia.—Dry mouth; coated tongue which shows impress of teeth; loss of appetite; nausea; flatulence in and tenderness of abdomen; dusky red face, and delirium following above symptoms; yellow, offensive stools; cordes on lips and tongue.

Rhus Tox.—May follow *Bryonia* or *Baptisia.* Mind dull and clouded; muttering or active delirium; tongue brown and dry, with a red tip; lips, teeth and gums covered by a brownish deposit; much prostration; pulse weak and slow; muscular soreness and stiffness of the extremities; abdomen bloated; copious, yellow, involuntary evacuations. This remedy is most often indicated as the symptoms given show in the second and third weeks.

Terebinth, 1 x.—Bleeding of the intestines, with tenderness of the abdomen; great distention and accumulation of gas; red, glossy tongue; mouth dry; great prostration and emaciation; offensive stools; bloody urine; may be bed sores. Drop doses every fifteen minutes.

Hyoscyamus.—Marked nervous symptoms; great nervousness; low, muttering delirium; sleeplessness; involuntary discharges from the bowels; picking at the bed clothes; gritting of the teeth; jerkings, trembling; rose spots on the chest and abdomen; cold extremities.

Also *Belladonna*, with great congestion of the head, red face, pupils of the eyes dilated, active delirium. *Hyoscyamus* may relieve this delirium if *Belladonna* does not. *Muriatic Acid.*—Extreme prostration; patient stupid and unconscious, sliding down in bed; low, muttering delirium; involuntary discharges from the bowels, and bladder; picking at the bed clothes. *Hamamelis*, 1 x.—Dark, pitch-like blood from the bowels; bruised, sore feeling in the lower part of the abdomen. Ten drops every half hour. Unless otherwise specified give the indicated remedy every one to two hours; put twenty drops in half a glass of water; teaspoonful doses.

Good nursing is of the utmost importance in typhoid; the patient must be put to bed, and not allowed to get up on any pretense; keep some disinfectant in the bed pan and disinfect the urine and stools with chloride of lime, six ounces to one gallon of water; protect the mattress with a rubber sheet; change the bed linen often, disinfect it and boil for half an hour; bathe the patient after each movement of the bowels with bichloride of mercury 1 to 2,000; cool sponge baths may be given every three hours, and should last twenty minutes, during which the skin should be exposed to the air; gas in the bowels may be relieved by passing a long rectal tube into the lower bowel.

While fresh, unskimmed milk is the best food (six ounces every two hours) with a teaspoonful of lime water if the stomach seems acid, peptonized milk, buttermilk, koumyss, matzoon, or white of an egg with water may be used as substitutes; strained mutton broth may be given, or meat juice if milk is not well borne; give plenty of pure water; rectal injections of nourishment if food is not retained by the stomach; during convalescence give broths; scraped beef; milk toast; blanc mange; wine jelly; soft egg; the soft part of oysters; steak to chew; baked potatoes, exercising with great discretion; no solid food of any kind if temperature goes over 100°. Brandy or sherry may be given for weak, irregular pulse, and delirium with much prostration; strychnine for heart failure, 1-50 to 1-100 of a grain. Persistent constipation may be relieved by soap and water injections.

Typhus Fever.—Putrid Fever.—*Ship Fever.*

Typhus fever is a highly contagious disease, due to a specific poison and developing especially where hygienic conditions are bad, as in overcrowded camps, prisons, hospitals, tenement houses or localities. It resembles typhoid fever but differs from it in many symptoms, typhus having a sudden onset; delirium from the first; high temperature on the second or third day (104° to 107°), which continues high; small, slightly elevated eruption called "mulberry rash," which persists; slight emaciation, and a duration of about two weeks, typhoid lasting from three to six weeks. The symptoms generally appear in the order given; severe chill or chills; vertigo; bad headache; muscular pains; loss of appetite; pain in the back; profound prostration; fever, with rapidly rising temperature as given above, which continues without remission during the first week. The measly-like eruption giving the skin a mottled look, appears by the fourth or fifth day; the pulse becomes rapid and feeble, and in the second week may reach 140 beats a minute; respiration is rapid; delirium occurs, or stupor, the patient conscious but appearing unconscious; the teeth and tongue are covered with the same deposit as in typhoid fever, and there is muttering, and picking at the bed clothes. Death may occur from exhaustion, and from complications. Convalescence is generally slow.

Baptisia.—Face flushed, dark red; mouth and tongue dry; putrid breath; sensitiveness on right side of abdomen; constipation; sweat on forehead and face; great prostration, livid eruption, stupor; this is the chief remedy, especially during the first week.

Belladonna.—During the second week if headache is intense, and there is much nervous excitement with delirium, throbbing of the arteries in the neck, and jerking and sudden starting up, give *Belladonna* or *Stramonium* if the delirium is so violent as to threaten to exhaust the patient's strength.

Phosphoric Acid.—During the second week when patient lies in a stupor or stupid sleep; when aroused is fully conscious, but shows stupor, indifference, a "don't care condition"; no excessive prostration; maybe copious, frequent diarrhœa, preceded by rumbling in the bowels.

Arsenicum.—Great prostration; thirst; burning sensations; sordes on teeth and tongue; watery, yellowish diarrhœa, or stools containing blood, slime or pus; high fever; sometimes inability to pass urine.

Under "Typhoid Fever" read the indications for *Rhus Tox*, *Muriatic Acid* and *Hyoscyamus*. A dose of the indicated remedy every one or two hours. *Opium* may be thought of when the patient lies in a state of torpor from which he cannot be aroused, with heavy labored breathing; face flushed a dark red; full, slow pulse.

Follow the general treatment outlined under "Typhoid Fever." Fresh air is very essential; keep the windows wide open, and protect the patient with blankets. Every noise should be hushed. Use baths to reduce the temperature; give nourishment regularly and persistently in small quantities, and treat heart failure as under "Typhoid Fever." The patient must be strictly quarantined, and disinfectants used freely.

Yellow Fever.

This disease is well described on page 524. Its chief characteristic symptoms are chill, fever of from 103° to 105°; headache; *severe* backache; flushed face; eyes suffused; vomiting; albumen in the urine; then after two or three days a temporary subsidence of the symptoms for twenty-four hours, followed by signs of collapse; skin cold and yellow; weak pulse; "black vomit"; black stools; bleeding from nose, or stomach or bowels; dry, brown tongue.

Camphor.—Drop doses of the tincture every ten minutes when the onset is marked by severe chills, and signs of collapse.

Aconite.—After reaction from chill; fever; burning heat; dry skin; full, hard, and rapid pulse; violent thirst; red face; headache; restlessness; prostration, and vomiting.

Belladonna.—Headache; face bright red, shining and swollen; throbbing of arteries in the neck; pain in the stomach, with nausea and vomiting; violent delirium.

Bryonia.—When disturbances of the nervous system subside, and the stomach symptoms become prominent; splitting headache; eyes red and sparkling; tongue coated yellow; lips parched, dry, and cracked; great irritability and vomiting.

Also *Arsenicum.*—Small, tremulous pulse; skin cold; cold, clammy perspiration; rapid prostration, and vomiting of brownish matter mixed with mucus. *Veratrum Alb.*—Acute pains in the stomach and abdomen; violent vomiting; skin cold; cold perspiration; small, weak pulse; collapse. A dose every fifteen minutes to half an hour in serious conditions calling for either *Arsenicum* or *Veratrum.* A dose of *Aconite, Belladonna,* or *Bryonia* may be given every one or two hours.

The patient must remain in bed, and use a bed pan containing disinfectant, see "Typhoid Fever." Liquid diet; rectal injections of nourishment if the stomach will not retain food; iced champagne or stimulants if there is danger of heart failure. Evacuations, clothing, etc., must be disinfected. Early treatment and good nursing are of the greatest importance.

Yellow fever germs are conveyed by mosquitoes, and persons in hot latitudes should always be protected from their bites by netting; should lead temperate lives; eat moderate quantities of wholesome food; bathe regularly, and avoid the use of stimulants.

Acute Inflammation of the Peritoneum.

Acute Peritonitis.

Inflammation of the lining membrane of the abdomen may be limited or general, and may be due to exposure to cold, to the extention of inflammation of some organ in the abdominal cavity, to wounds, tuberculosis or consumption of the intestines, and often occurs after childbirth. Consult the section on page 345 for a detailed description of the disease. The chief characteristic symptoms are sudden onset with chill; sharp, cutting pains; fever, the temperature rising to 102° to 104°; great tenderness over the bowels, with distention from gas; hiccough; nausea and vomiting, constipation; face pinched and anxious; rapid, wiry pulse. The great tenderness and sensitiveness to the slightest touch, and increase of severe unbearable pain by coughing or taking a deep breath, the high fever, and the position the patient assumes lying on his back with his knees drawn up show that the pain is not simple colic but either local or general inflammation of the peritoneum, and, it may be, of the bowels also. The course of acute peritonitis is very rapid, and the mortality is great. Death may ensue in from forty-eight hours to a week or two, or the disease assume a chronic form.

Aconite.—Inflammation from cold or exposure, and should be given early; hot, dry skin; great restlessness; high fever; hard, full, frequent pulse; short, quick breathing; abdomen hot, hard, swollen, and sensitive; great thirst. When peritonitis follows childbirth, and *Aconite* is called for, there are the symptoms given, also suppression of the flow of milk, and of the discharges of the womb and vagina; sharp, cutting pains, worse from pressure or lying on right side.

Belladonna.—Face flushed; throbbing of the arteries in the neck; great anxiety; the eyes shining and protruding; painful distention of the abdomen, with much heat and burning; sudden shooting, darting, colicky pains, worse from slightest contact or motion. After confinement when the discharges are hot and offensive, or suppressed, and there are violent after-pains.

Bryonia.—Follows either of the above remedies well, but *Aconite* best; splitting headache; shooting, cutting pains in the bowels, worse from slightest motion; great thirst for quantities of water; lips and mouth very dry; constipation; limpid exudation in the abdominal cavity.

Mercurius Cor.—Follows *Belladonna* particularly well when the acute inflammation results in the formation of purulent fluid or exudation; creeping chills; skin cold and covered with perspiration; foul breath; flabby, coated tongue; disturbed and painfully sensitive abdomen; mucous stool with urging, and violent burning and cutting pains, weakness and emaciation; swelling of the feet.

Veratrum Album.—Nausea and vomiting, with cold sweat; much diarrhœa; slow breathing; small and weak pulse; great restlessness, anxiety and exhaustion, in fact collapse.

Arsenicum.—Sudden sinking of the strength; restlessness; thirst for small quantities of water at a time; vomiting; violent burning and cutting pains in the abdomen; vomiting, and sometimes diarrhœa; the whole system is involved from absorption of the poisonous products of the inflammation; all symptoms worse after midnight.

Also *Rhus Tox* when peritonitis occurs in the course of the fever. *Cantharis* in extreme cases with scanty urine passed with great difficulty and a few drops at a time; great prostration.

Sulphur.—During convalescence to hasten the absorptions, and supplement the action of other remedies. A dose of the indicated remedy every half hour to one or two hours, according to the severity of the symptoms.

Good nursing is essential in these cases, and the removal of all sources of disturbances to the patient. Liquid nourishment in small quantities may be given every two hours, milk being best, hot or cold, plain, malted, peptonized or with Vichy water; soups or broths are sometimes more acceptable; beef juice and beef peptonoids are permissible; a return to solid food during convalescence should be cautious and gradual. Flannel compresses wrung out in nearly boiling water, and with a few drops of turpentine sprinkled on them before applying to the abdomen are recommended; cover them with oiled silk or dry flannel; renew frequently; cold compresses may be substituted for hot applications if preferred, but must not be allowed to become warm, or, saturate a linen cloth with one drachm of turpentine to one ounce of melted lard or olive oil. The bedding should be light, and pressure may be prevented by the introduction under them of a "cradle"; something similar may be improvised by using barrel hoops cut in halves. Bits of ice may be swallowed to relieve thirst, but should not be allowed to dissolve in the mouth when there is vomiting. Hot rectal injections are frequently beneficial.

Chronic Peritonitis.

THE chronic may follow the acute form, with thickening of the membranes, the formation of fibrous adhesions, and often the persistence of the effusions, so much exudation being present in some cases as to cause dropsy; obstinate constipation may alternate with diarrhœa; pain and tenderness vary in degree; the general health may not be much impaired or there may be much disturbance of the stomach and bowels, with great emaciation. Consult the remedies mentioned under the acute form.

Apis.—Soreness of the bowels and abdominal walls; pain in the abdomen on pressure, touch and on standing; pain extending upwards; swelling of the abdomen and legs.

Calcarea Carb.—Abdomen hard and distended, with drawing pains or cramp-like pains, and feeling of painful pressure in the lower bowels.

Sulphur.—Distention of the abdomen and great sensitiveness to touch, with fullness as if from much wind; bruised pain in the muscles, and griping pains about the navel; much gas passes from the rectum, and smells like rotten eggs; worse at night.

Also *Silicea* in chronic, obstinate cases with alternate constipation and diarrhœa; stools very offensive; abdomen distended and hard; cutting and pinching pains; much gas with rumbling in the abdomen.

Before using Homeopathic Medicines read pages 681 to 684.

Arsenicum Iod. Much prostration and emaciation; sweats and tendency to diarrhœa, and many of the symptoms given under *Arsenicum*, in the previous section. A dose of the indicated remedy three times a day.

The general treatment must be conducted along the same lines as in acute cases; absolute rest; light, nourishing diet; fresh air; gentle exercise if able, such as short drives or rides in a boat or wheel chair but not to the point of fatigue; frequent tappings of the abdomen if large quantities of fluid collect.

Inflammation of the Bowels.

Such cases may be recognized by heat, tenderness and distention of the abdomen; small, wiry and rapid pulse; obstinate constipation; excessive thirst, often severe pain and vomiting; drawing up of the knees as the patient lies on his back, and many other symptoms resembling those of peritonitis. In fact it is often very difficult for the non-professional to distinguish between the two conditions. It is of the less importance because the treatment general and special is practically the same, and the reader should consult the remedies given under acute and chronic inflammation of the peritoneum, as inflammation of the bowels also may be acute or chronic. *Aconite, Belladonna*, *Bryonia* and *Mercurius Cor.* are the remedies specially to be thought of, and *Cantharis* when the bladder is involved.

Prevention is an important part of the practice of medicine, so let the reader remember some of the common causes of inflammation of the bowels that they may be avoided so far as possible; exposure to cold and damp; eating unsuitable or tainted food; neglect of a hernia or rupture resulting in strangulation of the intestine; the excessive use of purgatives; neglect to have diseases of other organs properly treated. Other causes, such as wounds and typhoid fever, it may not be possible to avoid. In acute cases the diet should be light, and local application may be made as described under "Acute Inflammation of the Peritoneum."

Painter's Colic.

In lead or painter's colic, where lead has been absorbed into the system, there are violent, painful contractions of the abdominal muscles, a retraction or hollowing of the abdomen, and obstinate constipation; sometimes a blue line may be traced about the gums. A very good extended description of this condition is given on page 355.

Opium.—Violent griping and cutting in the abdomen; pressive pain in the abdomen, as if the intestines would be cut to pieces; constipation; abdomen hollowed in; pulse full and slow; retention of urine.

Platina.—Pressing, bearing down pain in the abdomen, extending into the groin; pain so severe it causes screaming and constant change of position while seeking relief.

Also *Alumina*, with spasmodic pains in the stomach and chest, with difficult breathing, or pain pressing down into the groins. A dose of the indicated remedy three times a day.

Workers in lead should wash their hands often, and always before eating, take frequent warm baths, and drink plenty of milk and large quantities of soft water; drink no liquors; lemonade is an excellent beverage. Change of occupation should be made whenever possible when affected by lead Copious injections of warm water are beneficial.

Fever and Ague.—*Intermittent Fever.*

THERE are severe forms of malarial fever described in detail on page 522, all characterized by three stages, the cold, the hot, and the sweating.

In the cold stage the patient has a severe chill, the face becomes pale, pinched and anxious; the teeth chatter, the body shakes, the rapidity of the perspiration and pulse is increased; while the urine diminishes and is passed frequently. When fever appears, the skin is burning hot; the face flushed; thirst is extreme; headache severe; pulse full, rapid and bounding; temperature high; urine scanty and high colored. In the last stage the patient generally perspires freely, the temperature falls and the attack is over for that time, after lasting several hours. If the disease persists, enlargement of the liver and spleen may result. Marshy districts are most prolific of chills and fever, but the wind may carry the disease inland. General debility, intemperance and exposure at night to the germ-laden air, favor its development. Defective drainage and sewerage may prove fruitful causes. The malarial parasite may be conveyed by the *anopheles*, a species of the mosquito, after the mosquito has become infected by feeding on the blood of a person having malaria.

Chininum Sulph.—Recent cases in marshy districts. Paroxysm preceded by headache, hunger and palpitation. Each stage well marked; first, severe chill, with violent shivering and aching pains, then fever, no thirst; yellow, sallow face. Attack occurs every second day.

Arsenicum.—After excessive use of *Quinine*, or in chronic cases with one stage absent, usually the chill, or with the chill and fever intermingled; urgent thirst throughout; pulse small and feeble; prostration, nausea, pains in the stomach and bowels; dropsical swellings.

Ipecac.—Backache; short chill; long fever; *nausea and vomiting predominate;* tongue coated yellow; difficult breathing.

Before using Homeopathic Medicines read pages 681 to 684.

Natrum Mur.—Chill, 10 to 11 A. M., beginning in the feet or small of the back; thirst; *bursting headache;* nausea and vomiting; nails blue. In the second stage heat, with violent headache and thirst followed by profuse perspiration which gives relief.

Eupatorium Perf.—Thirst several hours before the chill, continuing during the chill and heat; *short* chill, the hot stage *protracted,* and sweat *slight;* back aches as if it would break during the chill and hot stage; lips and nails blue.

Also *Veratrum Alb.* when coldness of the skin; cold, clammy perspiration are marked, also great thirst especially during chill and sweating; profound prostration; vomiting and diarrhœa, with griping, and pains in the back and loins.

Capsicum.—When chill begins in the back, with thirst; worse after drinking; chill is followed by sweat, or by *heat, with sweat* and thirst. A dose of the indicated remedy every one to three hours.

The general health must be improved by nourishing food, cod liver oil, malt extracts, iron, etc.; cold sponge baths taken; light weight woolen underwear worn; night air and irregular living avoided; sleep in an upper room if in a malarial district.

Bilious Remittent Fever.

THIS is a somewhat severer form of malarial disease than the intermittent, but is milder in the northern than in the southern states, where it more frequently occurs. The fever does not intermit, but continues right along although there are marked remissions of its intensity. Remittent may follow intermittent fever. Mild cases may last a week or two, but severe and badly treated ones, several weeks. Its symptoms and course are given on page 520.

Gelsemium.—Great languor and muscular weakness; head congested; face flushed; chilliness; full, quick, soft pulse; dull pain in the head, back and limbs.

Pulsatilla.—Whitish coating on the tongue; bitter risings and vomiting; chilliness; no thirst; especially serviceable in cases that drag along, and seem to make no progress towards recovery.

Ipecac.—Indigestion; headache; yellow or white coated tongue; bitter taste, vomiting and constant nausea.

Also *Belladonna* if the attack begins with a severe chill, with vomiting and retching; violent fever, worse at night. Consult the remedies under "Fever and Ague," also the general treatment.

Rheumatic Fever.—*Inflammatory Rheumatism.*

EXPOSURE to cold and dampness, or wet weather may cause rheumatic fever in those of lowered vitality. There is languor; chill or chilly sensations; fever; rapid pulse; soreness and stiffness of the joints, most frequently of the knee, ankle or wrist; profuse acid sweats; scanty urine. The temperature may rise as high as 103° or 104°. The attack may last from a few days to several weeks, and the acute form may become chronic. One attack predisposes to another. The heart may be more or less seriously affected.

Aconite.—The leading remedy full, strong pulse; great thirst, anxiety and restlessness; the affected parts red, swollen and exceedingly sensitive; later, high fever; shooting, tearing pains.

Bryonia.—When the disease is established; intense, local inflammation; joints pale or dark red, and exceedingly painful, worse by contact or the slightest motion; face flushed and hot; loss of appetite; tongue a dirty white; sticking pains in chronic cases.

Rhus Tox.—A valuable remedy, especially when the patient is impelled to move the parts, regardless of pain; fever; great restlessness; parts red and swollen, but better on continued motion; pains, drawing, tearing, burning; little swelling in chronic cases.

Pulsatilla.—Shifting, violent, drawing and jerking pains; chilliness; not much fever, redness or swelling; rheumatism in women with menstrual disorders.

Colchine 2 x.—Acute attacks, with much swelling and severe pain; fever; irritability; sensitiveness to touch; shifting pains. Six tablets in half a glass of water, one teaspoonful every three hours, omitting or lessening the strength of the medicine if disturbances of the stomach or bowels arise.

Chronic Inflammatory Rheumatism.

PAIN is the most prominent symptom, generally worse on motion, which may relieve stiffness. There is tenderness of the joints, with crackling, some swelling and redness. This form of rheumatism is most common between the ages of forty and sixty.

Bryonia, *Rhus Tox.* and *Pulsatilla* are often called for. They are described under "Rheumatic Fever."

Calcarea Carb.—Swelling of the joints worse with every change of the weather; after working in water, or when rhus has only partially relieved.

Dulcamara.—Chronic cases from living in damp rooms; working in cold, damp places, ice houses, etc.

Ledum.—Obstinate rheumatism, especially of the lower extremities, and smaller joints; stitching, tearing, rapidly shifting pains, and bruised soreness in the muscles.

Before using Homeopathic Medicines read pages 681 to 684.

Also *Mercurius sol.* especially in syphilitics, with tearing pains; profuse perspiration, which gives no relief, worse at night and in cold, damp air. *Kalmia.*—Wandering pains, especially in rheumatism of the chest and the upper part of the body, or affecting the heart; little or no fever or swelling. *Sulphur.*—Pains worse at night; feet burn; drawing, tearing pains in the limbs or back; nape of the neck lame and stiff. A dose of the indicated remedy three times a day.

Water must be taken freely, lithia and medicinal alkaline waters being indicated; milk is an excellent food; meat and stimulants are to be avoided. Massage of the affected joints is useful, also dry heat and galvanism. Turkish baths are frequently beneficial. Moderate movements of the affected joints should be persisted in. Sweets and starchy foods should be used sparingly.

Lumbago is rheumatism of the back for which *Bryonia*, *Rhus Tox.*, *Sulphur* and *Cimicifuga*, already described, are most frequently indicated. *Sciatica* or neuralgia of the sciatic nerve is treated of in another section.

Gout is a near relation of rheumatism in many of its symptoms, and is a general disorder of nutrition characterized by an excess of uric acid in the blood. It is well described in the section on the allopathic treatment of this disease.

Colchicine, one-grain doses every one-half to two hours is a most helpful remedy while the pain is severe, and may be given twice a day between the attacks. This remedy is very valuable when the joints are becoming deformed, especially these of the fingers, with slight, sticking pains, and sometimes redness. *Lithium Benzoicum* 1 x.—Gout with high-colored, strong smelling urine. *Nux Vom.* between the attacks is valuable in correcting constitutional conditions due to the use of stimulating foods or beverages, "high living," also *Pulsatilla* after rich foods, sweets, pastry, etc.

Dropsy.

Dropsy of the abdomen is so common and dependent upon so many diseases that a separate section is given to it. There are many other local accumulations, as dropsy of the brain or hydrocephalus, in which *Apis* or *Helleborus* may prove serviceable; the latter remedy when there is effusion of fluid, with the patient in a state of stupefaction or insensibility, from which it is extremely difficult to arouse him; there is rolling of the head from side to side; boring of the head into the pillow; sudden screams; grinding of the teeth; sometimes suppressed urine.

In dropsy of the chest or of the heart, *Jaborandi*, *Digitalis*, *Arsenicum* or *Helleborus* when there is the characteristic stupefaction and mental torpor, and when dropsy there or elsewhere in the body follows scarlatina or other eruptive diseases. *Apis* when there is great suffocation, the patient not being able to lie down, and feeling as if he were going to die; exudations in pleurisy. There is also ovarian dropsy, dropsy of the scrotum called hydrocele, and general dropsy or anasarca, well described on page 391, and in which any one of the remedies above mentioned may be indicated, especially *Arsenicum* and *Apis*.

These conditions are dependent on diseases of the general system or of certain organs, and require the skilled care of a physician. Most of the remedies named in this section are described fully under "Dropsy of the Abdomen." The treatment for ovarian dropsy and hydrocele is surgical.

Dropsy of the Abdomen.—*Ascites.*

ASCITES is an accumulation of serous fluid in the abdominal cavity. There is generally some history of disease of the liver, lungs, heart or kidneys. Enlargement of the abdomen begins from below and extends symmetrically upward, and pressure on the abdomen reveals a peculiar wave-like impulse of the fluid from one side to the other. Often swelling of the lower extremities follows, a diminution of the amount of urine and constipation. When there is heart or lung disease, the dropsical condition is general, and usually there is also water in the chest.

Apocynum.—Especially when dropsy is dependent upon diseases of the liver or kidneys, and there is scanty urine; great thirst; irritability of the stomach. Five drops of the fluid extract three times a day; if it causes nausea it can be diluted and injected into the rectum.

Digitalis.—Great anxiety and oppression; suffocative spells; sudden sensation as if the heart stood still; pulse feeble, fluttering, irregular, intermittent, or extremely slow; any motion, especially rising from a bed or chair, causes the pulse to become rapid, weak, and jerky; sometimes the face grows livid and there is faintness. This remedy is specially useful in dropsy dependent on heart disease, and may be given the same as *Apocynum.*

Arsenicum.—Ascites as part of a general dropsy, secondary to disease of the heart or liver, sometimes of the kidneys; pale, earthy, or sallow countenance; great debility, with faintness on the slightest motion; great thirst but drinks but little; sensation of burning heat all through the body, while the skin is cool; urine scanty and high-colored; emaciation; great prostration.

China, 2 x.—Dropsy in great debility, with impoverished blood, or after exhausting discharges; dropsy due to enlargement of the liver or spleen, especially from malarial poisoning; great debility; poor blood; diarrhœa and fermentation after eating; hunger; thirst; scanty urine containing a whitish or yellowish-red deposit.

Apis.—An important remedy, especially in general dropsy; skin whitish, waxy, transparent; eyelids puffy and swollen; scanty urination; no thirst; also in the dropsy accompanying heart disease, Bright's disease, pleurisy, etc.

Jaborandi.—Especially useful when dropsy is due to disease of the heart or kidneys; it produces copious perspiration, rapidly withdraws the water from the blood, and causes active reabsorption of the effusion. Five grain doses of the powdered leaves or tincture three times a day.

Medical treatment is always helpful, and may obviate the necessity for "tapping," as it is called, or the drawing off of the accumulated fluid. The latter must sometimes be done, however, to relieve pressure which interferes with breathing, and with the heart's action. Water should be drunk freely; a light, nourishing diet chosen, and vapor baths taken.

Also *Caulophyllum* when the small joints of the hands or feet are attacked. *Cimicifuga* when the pains are wandering, in the muscles of the limbs and trunk; rheumatism in nervous women. *Mercurius Sol.* High fever; quick, hard pulse; obstinate inflammation of a single joint; ruffy swelling, pale or light red; burning, deep-seated pains; foul breath; coated tongue; no appetite; great sensitiveness to cold. A dose of the indicated remedy every two hours, increasing the intervals as the symptoms are relieved.

During acute attacks of rheumatism the patient should remain in bed between blankets, wear a flannel nightdress, and be protected by a screen from all draughts. The room should be well ventilated. To acutely swollen and highly inflamed joints, antiphlogistine may be applied after cleansing the parts thoroughly with warm water and soap. In general, all joints may be protected by absorbent cotton or raw cotton and flannel bandages. An excellent lotion to apply by flannel compresses is carbonate of potash, one ounce, tincture of opium six ounces, warm water one pint. Change at once all coverings dampened by perspiration. Frequent warm sponge baths are a necessity. Liquid diet is indicated while there is fever, milk especially should be given; a light farinacious diet during convalescence, no meats; an abundance of water should be taken but no stimulants.

Night Sweats.

Night sweats are a marked symptom of pulmonary tuberculosis, and occur frequently during the course of acute diseases, in fact may be associated with a large number of diseases both acute and chronic. They are a symptom, and the cause must be found and removed. The reader is referred to the section on "Pulmonary Tuberculosis" for the indications for many remedies called for in night sweats in persons of a consumptive tendency.

For others a few remedies may be briefly mentioned, emphasis being laid on the fact that the general condition, habits and temperament of the individual must invariably be taken into consideration.

Hepar Sulph.—Great sensitiveness to the slightest cold air, with a tendency to easy, profuse, sour smelling, offensive sweat on the slightest motion.

China.—Sweat on back and neck from least motion in much debilitated conditions following diarrhœa, leucorrhea, loss of blood, and in nursing mothers.

Arsenicum.—Cold, clammy, or sour and offensive sweating in persons in malarial districts; copious perspiration when first going to sleep, with unquenchable thirst.

Ferrum.—Great weakness and nervous prostration; chilly every evening; profuse, long-lasting, clammy, debilitating sweating; sweat stains clothes yellow.

Phosphorus.—Profuse perspiration at night, during sleep, in the morning in bed, and on slight exertion; especially in connection with masturbation and sexual excesses, or give *Phosphoric Acid* in the same conditions and in brain fag, and in young people growing too fast, very nervous and emotional.

A dose of the indicated remedy twice a day. Remove the cause of this complaint, and correct all errors in diet, manner of life, etc.

Specific Indications for Remedies in Fevers.

Aconite.—Exposure to dry cold winds, draughts of air, effects of checked perspiration, getting wet when heated; fever after fright, chill from feet to chest; chilly when uncovered or even touched, coldness with redness of one, and coldness and paleness of the other cheek; dry heat in the face towards evening, with high fever, great fear, and nervous excitability, restlessness and tossing about; great thirst for large quantities of water; skin dry and hot; pulse full, hard, bounding; stinging, burning pains.

Antimonium Tartaricum.—Fevers following rheumatic exposure, living or working in cellars or basements, underground habitation or employment; chill and heat without thirst, alternating during the day; cold skin; trembling and chilliness always from within outward; short chill and long heat, or the reverse, with drowsiness and profuse sweat on the forehead; cold, clammy, profuse sweat of affected parts; fevers in spring and autumn, with nausea, vomiting and drowsiness, especially in children. *Antimonium Crudum.* Fever with predominance of stomach symptoms; constant discharge of wind up and down; heat with sweat; sweat at same hour every other day; chill without thirst; milky white, thickly coated tongue; desire for pickles, disgust for drink or food.

Before using Homeopathic Medicines read pages 681 to 684.

Arnica.—Malarial fever in cases when too much quinine has been taken; bruised, sore, weary feeling; great weakness making patient lie down, yet bed feels too hard, cannot find soft place; sour, offensive sweat; belching of gas tasting like rotten eggs; chill, with thirst, felt most in the pit of the stomach; heat of the upper part of the body, coldness of the lower; bitter taste in the mouth; tongue never clean; fever, especially in full-blooded persons, who feel the effects of even slight blows or injuries a long time.

Arsenicum.—A valuable remedy in typhoid, continued and intermittent fevers, malarial fever returning every year; chill, without thirst, better from external warmth; coldness of the whole body, pale, sunken face; chill mostly in the afternoon; hot stage intense and long lasting; great restlessness and debility; cold, clammy sweat; internal, burning heat; typhoid fever of a low type, with diarrhœa, distended abdomen, great prostration, weak pulse, burning pains in the stomach, dry, red or brown tongue, disposition to vomit, brown sticky deposit on teeth.

Belladonna.—Violent throbbing headache; rush of blood to the head; throbbing of arteries in neck and temples; skin bright, shining red; tongue red and dry; great thirst; burning heat within and without; boring of the head into the pillow; fever with delirium; sudden starting in sleep; pain in paroxysms, worse from any jar, from touch and towards midnight; excitability; convulsions.

Bryonia.—Complaints occurring when warm weather sets in after cold days; from cold drinks or ices in hot weather; after taking cold or getting heated in summer; fever, with suppressed eruptions; diarrhœa during hot days in summer; great thirst for large quantities of cold water; profuse, sour, oily sweat, easily excited by exercise, even slow walking; heat with increased thirst, dry, racking cough and pleuritic stitches in side; patient wants to be quiet and not move about; everything tastes bitter; pulse full and hard; violent headache as if the head would burst; constipation; dizziness.

Calcarea Carbonica.—Fair complexioned persons or those of a scrofulous makeup, disposed to grow fat; children who take cold easily, have large heads and abdomens; head sweats profusely during sleeping; acid stomach; chill, with thirst; heat without thirst; coldness of face, hands or feet; cheeks red; especially in fever from working while standing in cold water, or from handling wet clay or cold vegetables, or women with menstruation too early and too profuse, with cold, damp feet.

Capsicum.—Intermittent fever in midsummer, with chill beginning between the shoulder blades, better from hot applications externally, and by motion; thirst before and with the chill, but no pains in the bones; fever without thirst, and patient cannot bear any noise;

sweat without thirst; burning blisters on tongue; sometimes diarrhœa; burning and smarting sensations.

Carbo Vegetabilis.—Fevers especially in persons who have suffered from exhausting diseases, and have never fully recovered; fever after eating spoiled meats or fish, from getting overheated; weak digestion, the simplest food disagrees; much gas in the stomach and bowels; feeling as if the stomach would burst after eating; thirst during chill only, followed by heat with headache, flushed face, vertigo and nausea; profuse, sour sweat, especially while eating; tearing pains in the limbs and teeth.

Chamomilla.—Fevers of children with peevishness and irritability; feverish attacks in the spring in nervous persons, or from anger, vexation, etc.; young, fretful children during teething; chill without thirst; chilliness on undressing; heat and shivering intermingled; hot perspiration, especially of the face and head; one cheek red, the other pale; instead of fever a paroxysm of violent bilious colic with vomiting and diarrhœa, from anger and vexation.

China.—Ailments with fever from loss of blood, excessive lactation, diarrhœa, of malarial origin with fever every other day; nausea; ravenous appetite; palpitation of the heart; much thirst before the chill, ceasing as soon as the chill begins; violent shaking chill; heat without thirst, followed by sweating, with great thirst; bitter taste in the mouth; great debility and exhausting night sweats; skin yellow; bitter eructations and bitter vomiting; marsh fever and malarial fever returning every seven or fourteen days.

Cina.—Continued fevers in irritable children, who do not want to be touched or caressed, suffer from worms, rub or pick the nose all the time, hungry soon after a full meal and crave sweets; nervous, weakly, scrofulous children; pale face, with blue margins round the eyes; chill without thirst; shivering and creeping chills, with cold face and sweat on forehead and hands; heat with pale, puffy face; sweat without thirst, and vomiting after sweating.

Ferrum.—Especially adapted to debilitated women who yet have a red face; to excitable, argumentative persons, with extreme paleness of the face becoming red on the least pain, motion or exertion; painful blushing; general constitutional weakness; pale, watery, debilitating monthly flow; raising of partly digested food; vomiting after midnight; constipation; chill with thirst, and headache, head gets glowing hot, feet cold; heat without thirst; profuse, long-lasting sweat; prostration; lips, tongue, and inside of mouth bloodless.

Gelsemium.—Recent cases of malarial fever, fever attacks returning regularly without chill, with burning heat, great restlessness, then profuse sweat with thirst, pain and jerking in the limbs; fever with drowsiness, trembling and languor, pains in the neck and back; headache beginning in upper part of spine; vertigo; fever in hysterical women and children.

Ignatia.—Especially adapted to the nervous temperament, sensitive, excitable women; feverishness from grief, bad news, disappointments, in children after being punished; malarial fever with thirst *only during the chill;* shaking chill with redness of the face, great thirst, and desire for external warmth; heat of the whole body in the afternoon without thirst, and sweat without thirst; also fever with nettle rash of the whole body, and violent itching; lips dry and cracked; eruption on the lips and in the corners of the mouth.

Ipecacuanha.—Persistent nausea is a prominent symptom; short chills worse in a warm room and from external heat, better from drinking and being in the open air; long attacks of fever, with nausea and vomiting, cold hands and feet, great oppression of the chest, can hardly breathe; light sweat or profuse sweat after excessive use of quinine; the feeling of greatest prostration occurs during the chill; fever from irritation of the stomach in deranged digestion, with persistent nausea.

Lachesis.—Better adapted to dark, thin people with a tendency to low spirits, than to fair, fleshy persons; feverishness and hot flushes at the change of life with bursting headache, rush of blood to the head, great sensitiveness to touch and to tight clothing, feels worse after sleep, great physical and mental exhaustion; malarial fever returning every spring or after taking quinine or acids; chill beginning in the small of the back and without thirst, chill and heat in alternation, sometimes nausea or nausea and vomiting; heat with violent headache; profuse sweat smelling like garlic, and staining linen yellow; trembling of tongue when protruded; palpitation of heart.

Mercurius.—Catarrhal and bilious fevers; yellow fever; malarial fevers; hectic and irritative fevers of children, with intestinal derangements; free perspiration in all fevers affording no relief, and sometimes aggravating symptoms; chilliness of whole body in afternoon or evening, and on going into the open air; heat with thirst; heat alternating with chilliness; profuse, sour, offensive sweat on every motion and at night, staining linen yellow and wrinkling fingers like a washerwoman's.

Natrum Muriaticum.—Especially adapted to those debilitated from seminal losses or profuse menstruation, losing flesh even while living well; spring, summer and autumn fevers; malarial fevers, worse from heat of sun or stove, from sea air, talking, writing, reading or lying down; languor, headache and thirst before chill; chill with thirst about 8 A. M. followed about noon by heat with increased thirst and hammering headache; profuse sweat, with thirst, gradually relieving all pains except headache, fever blisters on lips; between attacks languor, debility, sallow complexion, loss of appetite and taste; muddy urine, with red, sandy sediment.

Nux Vomica.—Fever and ague in children; shaking chill, with blue mottled skin, especially on covered parts; great thirst during chill and fever tendency to spasms as the chill passes off and sweat comes on, constipation, with ineffectual urging to stool, especially in nursing children, malarial fevers in thin, irritable, nervous or sanguine persons, who are dyspeptic, and always on the rush, eating irregularly, and improper food, drinking much tea, coffee or other stimulants; morning chill, preceded by drawing pains in the lower limbs; sometimes heat and thirst, chill with bluish, cold face and hands; long lasting heat, with great thirst, but cannot move or uncover without feeling chilly; sweat, without thirst, relieving pains, tongue heavily coated white or yellow; bitter or sour taste; soreness of liver and spleen; loss of appetite; obstinate constipation.

Opium.—Typhoid fever; child-bed fever; intermittent fever, with chill predominating, shaking chill at 11 A. M. with great coldness of nearly the whole body, followed by burning heat all over, unrelieved by profuse sweat; heavy, snoring sleep, with open mouth and twitching hands; desire to be uncovered; typhoid fever with bloated, dark red and hot face; stupor or excessive drowsiness, with labored breathing; picking at the bedclothes; mild delirium or fury, singing, desire to escape.

Pulsatilla.—More especially indicated in fevers associated with pronounced disturbance of the stomach; gastric catarrh and indigestion in general, with putrid, slimy, greasy or bitter taste after eating, loss of appetite; tongue coated thickly white or yellow; bitter or rancid eructations; fat food and ice cream or ice water upset stomach; fever beginning with constant chilliness even in a warm room, worse evenings; shivering, creeping sensations; heat with thirst, intolerable, dry, burning heat evening or night, with distended veins and burning hands; one-sided sweat worse at night, and ceasing in morning; fever in mild, tearful, fair women and children.

Rhus Toxicodendron.—This remedy is indicated in scarlet fever of a typhoid tendency; irregular and dark red eruption, sometimes with watery pimples, swelling and dropsy of the tissues, enlargement and threatened suppuration of the glands of the neck and jaw; great restlessness; in small pox with dark, blackish eruption; dark, bloody stools, diarrhœa and restlessness; typhoid fever with great restlessness, tongue and lips dry, brown and covered with sticky deposit, weak pulse, distended and tender abdomen; remittent fever, constant chilliness, especially evenings; pains in the limbs, much thirst, coldness of hands and feet; heat with thirst and throbbing dull headache, profuse odorless, but not exhausting sweat; fevers in rheumatic persons.

Sulphur.—Chronic cases in scrofulous or nervous persons, when the indicated remedy does not give favorable results, or there are constant relapses; malarial fevers with chilliness every evening in bed followed by heat and burning of the palms of the hands and soles of the feet, and profuse perspiration, frequent internal chilliness, without thirst, chills up the back, frequent flushes of heat, profuse sweat at night or after waking in the morning.

Veratrum.—Congestive or pernicious malarial fever, with great prostration; fear of death; severe long-lasting congestive chill, not relieved by external warmth; face and extremities cold and clammy; cold perspiration over whole body, especially forehead; small, weak pulse; skin blueish, danger of death from collapse during the attacks.

Diseases of the Nervous System.

Headache.—*Cephalalgia.*

HEADACHE is a symptom, not a disease. Among the principal causes of headache are indigestion especially from rich or fried foods, or bolting one's food; constipation; excessive headwork or work where light or ventilation is poor; defective vision, with resulting eye strain; the use of stimulants including tea, coffee and patent medicines; sexual excesses; hysteria; excessive grief or anger; rheumatism; general debility; nasal catarrh; diseases of the liver, kidneys or generative organs; in women, suppressed monthly flow from getting wet or cold; syphilis; malaria; sleeping in a hot or badly ventilated room, and many acute diseases.

Try to discover, and when possible, remove the cause.

Belladonna.—Congestive or nervous headache; intense pain in forehead, temples and eyes, worse from slightest jar, motion, touch, noise or light; flushed face, hot head, throbbing in the temples.

Ignatia.—Nervous headache from grief, anxiety; generally one-sided as if a nail were driven into the head; periodical attacks in sensitive or hysterical women; face pale.

Gelsemium.—Dull, heavy pain, extending from the nape of the neck to the top of the head; dimness of sight or double vision; giddiness; pressure on top of head; eyes heavy; full pulse; feeling of exhaustion.

Bryonia.—Rheumatic headache in cold, damp weather with bursting, splitting pains in forehead somewhat relieved by pressure, worse from stooping or motion; irritability; fits of anger; sometimes bilious vomiting.

Cimicifuga.—Headache from loss of sleep, mental strain, or worry; dull, pressive ache from back of head to forehead and eyeballs; racking pain in bones of skull; headache at monthly period with bruised pain in small of back.

Glonoine.—Congestive headache from heat, as a hot kitchen or exposure to sun; severe throbbing, pulsating pains, with fullness, pressure and dizziness.

Irir Versicolor.—Sick headache, with blur before the eyes, followed by nausea and bilious vomiting; dull, throbbing or shooting pains in forehead; headache recurs about once so often; "school teacher's headache."

Nux Vomica.—Sick headache from wine, coffee, patent medicine, sedentary habits, or mental application; the sufferer wakes up with it, or it begins early in the day and increases; nausea; sour, bitter vomiting; constipation; symptoms worse from noise and after eating.

Silicea.—Chronic, persistent ache beginning in upper part of spine or nape of neck and extending over head; scalp often very sensitive; pain worse from noise, jarring or mental or physical exertion; better from warmth; "bookkeeper's headache."

Also *Coffea* for headache with great nervousness, wakefulness, pains seem unbearable, mind very active; useless for coffee drinkers. *Pulsatilla.* Headache from suppression of monthly flow or copious leucorrhea; from eating greasy food, rich pastry or ice cream. *Podophyllum.* Morning headache, with pain or soreness in liver; yellowish diarrhœa; giddiness, and heat and fullness in top of head. *Aconite.* Headache from simple cold in the head, and *Hypericum* for stitching pains or throbbing following a bad shaking up from a fall, blow on the head; eyes sore.

In congestive headaches the application to the forehead of small pieces of cotton cloth wrung out in cold or ice water (cold compresses), and of hot water bottles to the feet, often gives partial relief. A vegetable diet is often helpful to those subject to periodical sick headaches. Hot, dry flannels, a hot bag of salt or hops, or a hot water bottle lessen the pain in neuralgic and catarrhal headaches. A small cup of hot, strong coffee for *non*-coffee drinkers sometimes relieves faintness and nausea of headaches. Keep quiet and away from the light; eat simple food; keep the bowels open. Massage and electricity are helpful in headaches from exhaustion and nervousness; also beef and iron, and malt and cod liver oil when there is general debility. Take a dose of the indicated remedy every fifteen or twenty minutes during the attack; increase the intervals as pain lessens.

Before using Homeopathic Medicines read pages 681 to 684.

Failure or loss of memory may be the result of so many different causes that to enumerate them all would be impossible. Whatever impairs the nutrition of the brain, as an acute fever, severe mental shock, the trance state of hysteria, the use of alcohol, etc., impairs memory. Diseases of the brain itself, as meningitis, hemorrhage, softening of the brain substance or the formation of a tumor, affec-memory. Weak memory may be a passing and temporary condition, as when it occurs during convalescence from an exhausting disease, or may be permanent as in degenerative conditions embracing some form of insanity. Sexual excesses and perversions impair the memory often very seriously.

It is not to be supposed that remedies can be recommended to cure any case regardless of its origin. It should be remembered that weak memory or loss of memory is a symptom, and not the diseased condition itself. A specialist in nervous or mental diseases must frequently be consulted. A few remedies will be suggested for weakness of the memory due to the simpler causes.

Nux Vom.—Weak memory in those using alcoholic beverages to excess, or who are closely confined to mental work, who have stomach and liver troubles; cannot think correctly; sleepy after meals, but sleepless at night or have dreamy sleep, and are wide awake at 2 or 3 A. M. for an hour or two.

Phosphoric Acid.—Weakness of memory; patient finds it difficult to comprehend things; incapacity for thought; disinclination to talk; vertigo; frequent, profuse, and debilitating emissions; weak memory after sexual excesses.

Anacardium.—Great weakness of memory, especially as regards single names, worse forenoons; vanishing of thought; headache with great irritability; brain fag.

China.—Weak memory after exhausting diarrhœa, or loss of blood; after sexual excesses or masturbation; slow flow of ideas; difficulty in arranging thoughts; reverses words; easily thrown out by others talking.

Opium.—Loss of memory or weak memory from fright; great confusion, dullness and heaviness of the head, making thought and writing difficult, or give *Aconite* when there is weak memory from fright, with great timidity, fear of death, fear of the dark, etc.; excessive restlessness; variable humor, gayety then dejection; vertigo with nausea.

Ignatia.—Weak memory following suppressed grief, disappointment in love, etc.; much brooding over troubles in sensitive, changeable persons.

A dose of the indicated remedy twice a day. Improve the general health by rest, fresh air, and attention to all the laws of hygienic living.

Vertigo.—*Swimming of the Head.*

VERTIGO may be due to derangements of the stomach or liver, diarrhœa, constipation, loss of vital fluids, hard study, defective vision, diseases of the brain, heart disease, nervousness, epilepsy, malaria, general debility, many contagious diseases, old age, the excessive use of tobacco or drugs. Continual vertigo after heavy meals or considerable exercise is frequently a danger signal of apoplexy. Vertigo is a symptom of some disease or derangement of the functions of the body.

Nux Vom.—Vertigo after using alcohol or carbonated drinks, much tea, coffee, or tobacco; vertigo from over-eating, constipation, excessive mental exertion accompanied by debility.

Phosphorus.—Vertigo when there is great nervousness; uncertainty in walking or standing, and the sufferer feels as if drunk, walks with legs far apart or takes short strides; dullness and confused feeling in head; much debility; vertigo worse after meals and sleep; vertigo from sexual excesses.

Digitalis.—Vertigo with heart trouble; tendency to faintness and breathlessness; some palpitation; slow, feeble pulse; anxiety and weak memory.

Conium.—Vertigo in feeble, old people, especially on rising in the morning and when walking; weakness of vision; staggering, uncertain gait; vertigo from masturbation.

Also *China* for vertigo following profuse bleeding or diarrhœa. *Aconite.* Vertigo from rush of blood to the head, worse after stooping, nausea; full pulse. *Cocculus* for vertigo from riding in the cars or a carriage; from seasickness. *Arsenicum,* when vertigo is due to malarial surroundings, bad air in work shops, from cesspools, lack of ventilation, etc. *Glonoine,* where head is affected by the sun or other intense heat.

When the system is debilitated, build it up by outdoor life and simple, nourishing food. Do not use alcoholic beverages. Find what causes the vertigo. Avoid excitement, over-work or over-exertion. In acute cases a dose of the indicated remedy every half hour or hour; in chronic cases, four times a day.

Sleeplessness.—*Insomnia.*

ANXIETY, over-fatigue, nervous prostration, excessive labor, mental or physical, fright, excitement, tea, coffee and other stimulants, including tobacco, may cause sleeplessness, also too little fresh air and exercise, eating a hearty meal in the evening, pregnancy and many diseases.

Coffea.—When the patient is quiet and sleepless; the senses all acute; distant noises are heard with great distinctness; the mind is active and busied with plans; next day brain fag; and dull headache. Also, for wakefulness and fretfulness in nervous children. A dose four times a day. Useless for coffee drinkers.

Nux Vom.—Sleepy in the evening; falls asleep in his chair and upon going to bed; wakes before daylight; drowses, and rises with headache, and more tired than upon going to bed. Often associated with constipation or indigestion. A dose four times a day.

Belladonna.—Especially for children, who start up in fright just as going to sleep, or who wake and cry out suddenly during the night; restlessness; bad dreams. A dose four times a day.

Sulphur.—The patient sleeps in "cat naps"; the least noise awakens and there is great difficulty in getting to sleep again. A dose morning and night.

Hyoscyamus.—Drowsy but cannot sleep, or twitches and talks in sleep, dreams bad dreams, awakes with a start and frightened, thinks there is something or somebody in the room. A dose four times a day.

Remove the cause if possible. Sleeplessness from nervousness and exhaustion will be benefited by a drive or open car ride in warm weather in the evening, retiring immediately on returning to the house. A cold douche along the spine in the morning followed by friction and warm sponge bath at bedtime, with open windows in bedroom all night will be helpful. No late dinner but a glass of warm milk, malted milk or grape juice before retiring if faint. Massage is excellent. Avoid excitement or mental exertion in the evening, late hours, soft beds and too many bedclothes; sleep alone.

Rush of Blood to the Head.—*Hyperemia of the Brain.*

Rush of blood to the head is not uncommon in full-blooded persons, but exactly similar sensations may be experienced by persons in a debilitated, ill-nourished condition. Hyperemia of the brain is a symptom, and may be associated with many diseases, but in general we may say the normal circulation or nutrition of the brain is interfered with. The attacks may be acute or chronic, and may precede, accompany, or follow other illness. The symptoms may be learned from the indications given for the use of the following remedies:

Aconite is the remedy for acute congestion resulting from cold or violent emotion, with hot, dry skin, full, bounding pulse.

Belladonna.—Face red and congested; eyes red; aversion to light and sensitiveness to least noise; sudden starts and jerks; tendency to delirium. Especially indicated for children.

Glonoine.—Sudden and intense congestion, with *violent* headache, and absence of fever, especially after heat-stroke, or after suppression of the monthly flow, with great giddiness, throbbing and roaring in the ears.

Veratrum Vir.—Rush of blood to the head with fever; headache; violent throbbing of the arteries in the neck; sensitiveness to sound and light; flushed face; tingling and prickling in lower limbs; full, hard, bounding pulse.

Gelsemium in recent cases of congestion with a dull, heavy, besotted expression of countenance; eyes heavy and bloodshot; dizziness; pulse full and round, but not hard like the *aconite* pulse.

Also *Arnica* when from an injury, or from excessive exercise, with much vertigo. *Ferrum Phos.* when congestion of the head is followed by nosebleed. *Nux Vom.* after indulgence in stimulants, and in chronic cases where there is much mental exertion or a sedentary life.

In ordinary cases not due to over-exertion or heat stroke take moderate out of door exercise; breathing exercises morning and night, inhaling a full breath gradually through the nose and expiring forcibly; cold sponge baths in the morning; warm foot baths; massage and electricity. The diet should be simple and overeating must be avoided. Use no coffee or alcohol; refrain from sexual intercourse; drink plenty of water; find out if you have any disease of the heart or kidneys. In acute cases take a dose of the indicated remedy every half hour for several doses, then lengthen the intervals; in chronic cases, a dose every two or three hours.

Delirium Tremens.—Drunkard's Delirium.

Mania a Potu.

ALTHOUGH this section deals with an extreme manifestation and result of the habitual use of liquor, it is regarded as important to point out wherein a "plain drunk" may be differentiated from a person suffering from an apoplectic stroke; serious mistakes have often occurred. In the person overcome with liquor there is first the odor of alcohol; the eyes are blood-shot, the pupils contracted or dilated; breathing is but little different from the normal; usually there is no paralysis; the pulse is frequent and feeble; the person can be temporarily aroused, as a rule, by shaking or holding ammonia to the nose. In apoplexy there is no odor of alcohol; the pupils of the eyes are unequal in size or dilated; breathing is labored and puffy; there is paralysis; absolute unconsciousness; pulse slow, and strong or irregular. For treatment of apoplexy consult the section on that subject, page 202.

Delirium tremens is a condition characterized by constant tremor, great exhaustion, and distressing illusions and hallucinations, resulting either from the prolonged irritation of the brain by alcohol, or from the sudden withdrawal of alcohol from the inebriate. A heavy drinker may develop delirium tremens after a sudden shock, fright, accident, etc., or during an acute disease, especially pneumonia. The premonitory symptoms ordinarily are great restlessness, irritability, depression and sleeplessness. The symptoms during an attack are well described on page 191.

Hyoscyamus, 1 x.—Delirium mixed, changing constantly from one form to another, *i. e.*, patient loquacious, furious, muttering, and incoherent; pulse small and quick, very compressible; skin cold and clammy; pupils of the eyes dilated; patient will not stay in bed.

Antimonium Tart.—Much disturbance of the stomach, and ejection of slimy mucus, as when beer has been the intoxicating agent; profuse cold sweats; tongue heavily coated a pasty white or red in streaks; high delirium with obstinate sleeplessness.

Opium.—Lethargic condition; loud labored breathing; loss of consciousness and sensation.

Arsenicum.—A valuable remedy when there is much irritability of the stomach; diarrhœa; frequent passing of urine; muscular tremors; great prostration; also fear, with great anguish and sweat, dread of ghosts, thieves, or of death, and especially of vermin crawling in the bed.

Also *Nux Vom.* is a most reliable remedy during convalescence and also to ward off an attack; a dose three times a day of the third decimal (3 x). To "sober up" a person who is badly under the influence of liquor, give by mouth one small teaspoonful aromatic *Spirits of Amoniam* in a little water. A cup of strong black coffee is a great help; repeat the dose if it is vomited. When great difficulty is experienced in giving the indicated remedy and the patient thinks he is going to be poisoned, give at bedtime one full dose of *Chloral Hydrate*, say thirty grains, rubbed up with equal parts of simple syrup and balsam of peru; this will often induce sleep, and make it much easier to proceed with the regular treatment. *Strychnia* (1 x) every two hours when the heart's action is weak.

Nourishment is of the greatest importance. Clean out the stomach if necessary by producing vomiting with warm water and mustard, then give strong black coffee to settle the stomach and also to stimulate the patient. Peptonized milk and beef juice given frequently in small quantities are valuable when food is retained with difficulty. Increase nourishment as rapidly as digestion permits, giving egg beaten up in black coffee, strong broths, warm milk, beef tea seasoned with red pepper, egg-noggs.

In restraining a patient use as little violence as possible; use tact and humor them in their fancies; a sheet tied across the bed over the patient is better than using direct force. Keep the windows locked, and remove every cutting instrument, poker, etc. Keep cool and have someone within call. Use cold baths or cold packs when there is fever, and warm packs as a sedative. When there is a suppression of urine give warm foot baths.

Inflammation of the Brain.—*Brain Fever.*

BRAIN fever may complicate acute infectious diseases or be the result of alcoholic excesses, injuries or sunstroke, or a life of anxiety and privation. This disease comes on with more or less pain in the head, with heat and delirium; eyes blood-shot; high temperature and the initial symptoms followed by drowsiness and inclination to vomit. The pulse is usually rapid and feeble. There is loss of appetite; great restlessness; short naps more like lethargy, and frequent crying out from pain.

Read the symptoms indicating the use of *Aconite* and *Belladonna* under "Spotted Fever," page 867.

Hyoscyamus.—Face pale and sunken; delirium of a stupid, muttering form although this may be preceded by violent outbreaks; the head is shaken from side to side; great prostration; sitting up in bed seems to give some relief.

Also in brain fever following a fall or blow on the head give *Arnica;* if from intoxicating drinks or intense study, *Nux vom.*

Keep cold compresses, an ice bag or ice coil on the patient's head, and be sure the applications are not allowed to become warm. If patient is delirious, endeavor to restrain him by soothing speech, avoiding force as much as possible; cool sponge baths may be given frequently, and milk and broths for nourishment. Remedies should be administered every hour.

Apoplexy.—*Apoplexia.*

ALTHOUGH apoplexy may occur at any age, it is most common after the fiftieth year, because the blood vessels degenerate as one grows older. The abuse of alcohol, immoderate eating, syphilis, and prolonged muscular exertion are among the common contributing causes. Apoplexy is not hereditary as many once thought, but people's arteries and other blood vessels do age earlier in some families than in others. In apoplexy there is great congestion of the blood vessels of the brain, with sudden rupture of one or more of them and consequent hemorrhage, the pressure causing complete or partial paralysis.

When only the left side of the brain sustains this injury, the right upper and lower extremities are liable to paralysis. When the right is similarly affected, the left side usually becomes paralyzed. When the hemorrhage affects both sides of the brain, paralysis is as a rule general, and the patient wholly unconscious. Premonitory symptoms are rare, but when present there is numbness of the hand and foot on one side, and failure of memory for words. An excellent description of the various forms of apoplexy is given in this book under allopathic treatment of diseases, and the recommendations for the prevention of future attacks should be carefully read also.

Aconite.—Pulse full and strong; skin dry and hot; vertigo; full feeling in head, with restlessness and anxiety, face rather pale or pale on one side and red on the other. A dose every hour, or during an acute attack every half hour for several doses, using the first decimal, 1 x. This remedy takes the place of the old resort to bleeding.

Belladonna.—Face very red; arteries pulsating strongly, pupils dilated, eyes sensitive to light, twitching of muscles, loss of speech; should be given as early in the attack as possible. A dose as above.

Opium.—Heavy stupor; irregular slow pulse; pupils contracted; patient groans; cold sweat on face; feces and urine passed involuntarily; convulsive motion of extremities; irregular labored breathing. A dose every fifteen minutes.

Also *Arnica*, which is a most valuable remedy after the acute symptoms have subsided to bring about absorption of effused blood, and *Sulphur* which follows *Arnica* well when the patient's convalescence is very slow. As a remedy for the prevention of apoplexy *Nux Vom.* should be taken by full-blooded persons or those of sedentary habit accustomed to a rich diet or alcoholic stimulants, and subject to rush of blood to the head.

General treatment of an acute attack must be commenced immediately. Get the patient to bed if possible, and loosen or remove all clothing, especially about the neck, moving the sufferer as little as possible. Cut the clothing off if necessary. Keep the head higher than the body, and the neck in such a position that the blood can flow freely. Put hot water bags to the feet, with flannel between so as to avoid burns, and an ice bag, ice cap, or ice cold compress to the head, the legs may be wrapped in cloths wrung out in steaming hot mustard water, a cupful to a pail. The bowels must be freely opened by a large warm soap and water enema, or by calomel, if necessary. The water may have to be drawn from the bladder. Keep the patient absolutely quiet; give nothing but milk or broth. Gentle rubbing of the body, fifteen minutes only at a time and always rubbing away from the head will benefit during convalescence, also electricity after from two weeks to a month. Apoplexy may be mistaken for alcoholism; smell the patient's breath. Do not give any stimulants.

Sunstroke.

SUNSTROKE is heat-stroke, and persons stricken down in boiler rooms, foundries, laundries and kitchens must be treated the same as those affected by the direct rays of the sun. Mild cases exhibit only weakness and faintness; severer cases, pallor of the face, blindness, cold sweat, and partial or complete unconsciousness; there may be profound collapse, delirium and death. Previous attacks and the use of alcohol predispose to heat-stroke.

Glonoine.—From excessive heat or exposure to sun; face pale; pulse round and full; intense, throbbing headache; feeling as if the head would burst open; labored respiration; sinking sensation in stomach, nausea and vomiting. A dose every fifteen minutes, increasing the intervals as the patient improves.

Belladonna.—Severe headache in forehead and temples, worse when stooping; flushed face; throbbing of arteries in the neck; bounding pulse; sometimes loss of consciousness and convulsions. Give as above.

Gelsemium.—Great prostration; soft pulse; vertigo; blurred vision; fullness and weight in the head; also for oppressed feeling, irritability, and palpitation of the heart from exposure to heat. Give as above.

Also *Veratrum Vir.* when the face and head are intensely congested, and vomiting and convulsions occur.

Natrum Carb. invaluable in curing the after-effects of heat stroke, such as loss of memory, depression, prostration, and constant headache, also when heat affects head unpleasantly in hot weather.

Prevention is even better than cure. Eat little meat in hot weather; keep the bowels free; drink plenty of water, *not iced;* wear light weight and light colored clothing; bathe often. If working in the sun put a wet leaf or sponge in your hat; quit work and rest in the shade if dizzy or head aches.

If treating a case of heat stroke, place the patient in the shade, or in a cool room; loosen the clothing, or remove it and sponge the body with tepid water; apply cloths wrung out in *hot* water to the head and change them *frequently;* put hot bricks, or a hot water bag, to the feet if they are cold; as soon as the patient can swallow, give hot milk, beef tea or coffee in small quantities.

Spotted Fever.—*Cerebro-spinal Meningitis.*

No disease of modern times is more dreaded than epidemic "spotted fever." Not infrequently cases of meningitis occur scattered here and there, but too often an epidemic prevails confined to a town or city, but caused by the spreading of the germs. It is believed the germs are most apt to enter the system through the nasal passages. Common complications are influenza, pneumonia, pleurisy and mumps, in fact nasal catarrh or grip often precedes the development of meningitis. The germs affect the membranes covering the brain and spinal cord, and a turbid fluid forms which presses upon the sensitive nerve tissues causing immediate and serious results The onset of spotted fever is generally sudden, with headache, severe chill and vomiting. There is fever, with full strong pulse, and painful stiffness of the muscles of the neck. The headache increases, the patient sees double or cannot see, and is highly sensitive to every noise; has severe pains in back and legs, while the neck may be drawn backward and the muscles become rigid. The headache is very severe, and delirium or lethargy result. Reddish, purple or mottled spots appear on the body giving the common name, "spotted fever." About one-half of the cases die within five days; when recovery ensues, convalescence is slow and tedious and relapses may occur, or other diseases develop. It is necessary to know the symptoms so that the gravity of the disease may be appreciated and a good doctor called, but treatment should be commenced immediately, and a dose of the indicated remedy given every hour. Use the tincture or first decimal (1 x)

Aconite.—Fever; dry, hot skin; full pulse; face flushed and swollen; burning sensation in head; surface of the body cold.

Belladonna.—Follows *Aconite* well; throbbing arteries; quick pulse; face red and swollen; eyes bright; boring of head into the pillow; great sensitiveness to light, touch, and noise; twitching of limbs; unconsciousness; delirium.

Gelsemium.—Early in the attack; spine very sensitive; severe chill followed by fever; great prostration and drowsiness; weak, irregular pulse; dimness of vision; mental dullness; may be nausea and vomiting.

Veratrum Vir.—Violent vomiting, and pain in the head and stomach; convulsions; head bent backward; pupils of eyes dilated; eyes roll from side to side; slow, irregular pulse.

Cimicifuga.—Intense pain in the head and spine; muscles of the neck and back rigid, with retraction; skin sensitive, muscles sore; muscular spasms and jerkings of legs and arms.

The general care of the patient is of the utmost importance. He must be kept perfectly quiet in a well-ventilated darkened room. Hot baths and especially hot packs are beneficial. An ice cap may be applied to the head. Keep the bowels open and give the patient plenty of water to drink. Give nothing but liquid food, milk and strong broths, until the fever and worst symptoms subside; no stimulants unless the pulse and breathing are feeble. Many times physicians puncture the membranes of the spine with a certain kind of needle and withdraw some of the fluid which has formed, thus relieving pressure, or remove a small section of the skull for the same purpose. Injections of antitoxin are also used.

Prevention of "spotted fever" is most important, and consists in keeping streets, yards and cellars clean, and the general health in good condition. Cleansing of nasal passages and throat morning and night, by douching with a mild antiseptic is recommended during an epidemic.

Inflammation of the Spinal Cord.—*Myelitis.*

THERE are several forms of this disease which is not an uncommon one, but all are characterized by a diffused inflammation of the spinal cord, with softening of its substance; the membranes may or may not be seriously inflamed. It is always of advantage to know the causes of a disease. The most prominent ones of a myelitis are exposure to cold, a bad wetting, or lying on cold, damp ground, muscular strains, syphilis, sexual excess, injuries such as fracture of the spine, or even apparently slight injury, one authority citing a case in a boy, following a sprained back acquired by throwing a club up into a tree. Myelitis also sometimes is a sequel of acute infectious diseases such as smallpox, typhoid or typhus fever, inflammatory rheumatism and measles, and may complicate child-bed fever and diseases of the bones of the spine.

The early symptoms resemble those of any acute inflammatory affection, chill, high temperature of from 101 to 104 degrees, rapid pulse and prostration of the whole system, but special symptoms quickly appear such as heaviness and dragging of the limbs followed by loss of motion and increasing paralysis, numbness and crawling sensations. When the region affected is the upper part of the back, there is a feeling as if a belt were drawn about the waist. There is not much pain in the back, but the pain in the legs or abdomen in the beginning. The point to which insensibility to touch extends marks the location of the disease. The patient may have difficulty in urinating, and the bowels be constipated. Paralysis of the rectum and bladder is marked when the lower third of the cord is affected. Bed sores are liable to result from even slight pressure. The prospects of recovery are not good; death may occur in three or four days or a few weeks, or the acute form of disease become chronic; recovery generally occurs promptly if at all.

Aconite.—In the beginning, after exposure to cold, cold winds; chill followed by high fever, rapid bounding pulse; pain and stiffness of the neck; skin red, hot, shining.

Mercurius Iod.—In cases due to syphilis with progressing paralysis of the extremities, and of the bladder and lower bowel, with tendency to twitching and convulsive movements; some spinal pain worse from pressure. This remedy is followed well by *Kali Iod.* in markedly syphilitic cases.

Arnica or *Hypericum* may be indicated, the former in myelitis following wounds, falls or blows, with a bruised, sore feeling, and especially after great muscular exertion; the latter in cases following injuries to the nerves as in lacerated or punctured wounds, concussion of the spine and injury to the end of the spine from a fall.

Also *Dulcamara* in myelitis after getting soaking wet or being out long in wet, foggy weather.

Rhus. Tox. in cases developing during inflammatory rheumatism. *Arsenicum Album* when a sequel of acute infectious diseases, or resulting from the direct absorption of septic matter as in child-bed fever. *Strychnia,* one-sixtieth of a grain three times a day in cases becoming chronic. *Hyoscyamus* in cases marked by paralysis of the bladder and lower bowels and convulsions. *Belladonna* is a remedy more truly indicated where the coverings of the cord are highly inflamed, resulting in spinal meningitis with much pain and tenderness along the spine.

The patient should be kept absolutely quiet in bed, scrupulously clean by means of luke warm sponge baths, and the back and all parts where pressure is felt gently rubbed twice a day with alcohol, then thoroughly dried and dusted with talcum powder. Keep the sheets free from wrinkles. Bed sores are the greatest danger, therefore if the skin gets reddened despite alcohol rubs and powder, use air cushions or rubber rings, or place the patient on a water bed. Consult the section on "Bed Sores." Electricity along the spine will benefit chronic cases, but must not be used while the disease is acute. Leakage of urine into the bed must be prevented by the use of absorbent cotton, or a bed urinal. Equal parts of iodine and arnica tincture may be painted along the spine twice a week in chronic cases.

Paralysis.—*Palsy.*

PARALYSIS is a loss of power of motion, and as a common term is often applied to loss of any kind of bodily function, such as sensation or secretion. Paresis is a term used to indicate a partial paralysis; do not confound it with the term general paresis, which is a form of insanity. Paralysis is generally a symptom of disease of the brain or spinal cord, but sometimes it arises from injury or pressure upon a nerve trunk, or from the effects of poison on the nervous system. There are many different forms of this dreaded affection; several of them are well described in earlier pages of this work to which the reader is referred.

There may be a hereditary tendency to paralysis due to the bad habits of one or both parents, such as intemperance, the excessive use of tobacco, chloral, cocaine, or some form of opium. Local paralysis such as wrist drop is caused by lead-poisoning, facial paralysis by pressure on nerves leading to the face, and the paralysis of diphtheria from inflammation of certain nerves supplying the throat, eyes, etc. Paralysis in those of a highly nervous temperament may be simply an hysterical inflammation.

Aside from the special forms is the paralytic stroke which may be preceded by numbness, coldness, paleness, and slight convulsive jerking or twitching. The loss of motion, or motion and sensation which follows may be partial or complete, and affect either the upper or lower half of the body, or one or both sides. The patient's return to his usual condition is generally slow and imperfect, and sometimes the muscles of the affected portion of the body waste away.

Aconite.—Premonitory symptoms and acute attacks; numbness, crawling sensation, feeling as of pins and needles in legs and arms, or loss of motion and sensation.

Gelsemium.—Paralysis not due to organic disease; loss of motion but not of sensibility, also when paralysis is preceded for some time by giddiness and heaviness of the limbs, the eyelids feel heavy and droop. Useful in paralysis following diphtheria.

Conium.—Sensation is not much affected, but motion, especially of the legs, is lost partially or wholly. Paralysis in old people, or when preceded by stupefying headache, vertigo, great drowsiness, heat in the head and eyes, with coldness of the hands and feet, dilatation of the pupils of the eyes.

Phosphorus.—When the paralysis is confined to either the upper or lower extremities and is preceded by debility and exhaustion; in cases of softening of the spinal cord; wasting away of the muscles of the legs or arms.

Mercurius Vivus.—Paralysis due to syphilis or hemorrhage of the brain; rigidity of the lower limbs with cold sweat at night.

Nux Vom. in threatened paralysis due to intemperance; patient finds difficulty in guiding himself, and trips over trifling obstructions; twitching of the limbs at night; of no use when loss of motion is complete.

Also *Causticum* in paralysis associated with marked disturbance of the urinary organs, when the extremities tremble on walking or standing, but not on sitting. *Ignatia* in cases of hysterical origin. *Arnica* in paralysis due to shock or a fall, and facial paralysis from an injury, with much soreness of the affected parts, and inflammation of the nerve.

Belladonna, recent cases especially of facial paralysis with much congestion of the affected part; throbbing and inflammation; also right-sided cases of paralysis of the body. *Plumbum* paralysis is due to disease of the spinal cord with wasting away of muscles.

Give the indicated remedy three times a day; keep the patient quiet in bed, and let the diet be light and nutricious. Friction of the affected parts or massage and passive motion is helpful, also electricity, but not while there is an organic cause. When there is wasting of the muscles, rubbing with cod liver oil, or cocoanut or sweet oil is recommended. In paralysis in children cold spinal douches are excellent, also persistent bathing with salt water, followed by brisk rubbing.

Before using Homeopathic Medicines read pages 681 to 684.

Hydrophobia.

The bite of a rabid dog, wolf, skunk, cat or fox may cause hydrophobia. Lacerated wounds about the face, head or hands are most apt to be infected, but the disease develops in only fifteen per cent. of persons bitten. The period of incubation is shorter in children than in adults, and is generally under two months; in rare instances two years may elapse. The symptoms are stated on page 208.

Belladonna, 1 x.—Give this remedy at once, frequently, for at least six weeks, and also at any time afterwards if convulsions occur, with great burning and much frothy mucus in the throat; constriction of the throat on attempting to swallow; face red and bloated; foaming at the mouth; spasms; delirium. A dose every half hour during an attack.

Scutellaria, 1 x.—Restlessness at night; frightful dreams; heart's action rapid and uneven; with pain, tremors and muscular twitchings; when hydrophobia develops with spasmodic or constrictive closing of the jaws, and rigidity of the muscles of the face. A dose as above.

Stramonium, 1 x.—Extreme irritability; disturbed sleep with horrible dreams; and sudden shrieks; pupils of the eyes dilated; when hydrophobia develops, delirium, biting and tearing, frothing at mouth.

The first thing to do if there is no abrasion of the mouth, is to suck the virus from the wound, or if there is no one to do this, to cauterize the wound with nitrate of silver or a live coal, a white hot iron, poker, stove lifter, flat iron; bromine, fuming nitric acid or pure carbolic acid may be used. Poultice the wound, and keep it open several weeks. If anywhere near the Pasteur Institute in New York or other cities, send the patient there for inoculation with the attenuated virus. Antitetanic serum has also been used elsewhere in cases of hydrophobia, but results have not been uniformly satisfactory.

Lockjaw.—*Tetanus.*

Tetanus is now known to be a germ disease, scientists having isolated a specific organism which occurs in the earth, and sometimes in putrefying fluids and manure. In rare cases lockjaw results from exposure to cold or sleeping on cold, damp ground; commonly, however, it follows a punctured or bruised wound of the hands or feet, sometimes a very trifling injury. The symptoms usually appear within two weeks. The virus of tetanus is perhaps the most virulent poison known; it is produced by the bacillus or germ already mentioned, the bacillus forming at the site of the wound, but the poison developing in the blood and organs of the body. Even babies may contract tetanus, and these cases are nearly always fatal. The mortality is always very high whatever the age, and when death ensues it usually takes place in from three to seven days from respiratory spasm, heart-failure, or exhaustion from the long-continued spasm. Considerable time elapsing between receiving the wound and the development of lockjaw, absence of fever, spasms confined to the neck and jaw are favorable indications, also lessening of the number of spasms and increased ability to sleep. Consult page 210 for a description of the symptoms. Tetanus is more common in hot than in temperate climates, and in males than in females.

Belladonna.—Stiffness of the jaws with convulsive movements, grinding of teeth; dilated pupils; foaming at mouth; difficult swallowing; shooting pains; staring eyes; spasmodic breathing; restlessness; involuntary discharge from bowels and bladder; sleeplessness; congestion of the head and spine.

Aconite.—Rigidity of the lower jaw; face covered with cold sweat; stiffness of the limbs; head and neck bent backward; more or less fever; numbness and tingling. Tetanus following exposure to cold, or cold and a wound.

Strychnia.—This is an important remedy, and its keynote is intermittent spasms excited by the slightest touch, noise or motion; during spasm body bent backward, and respiration much disturbed; stiffness of limbs; muscles very hard; patient fully conscious during spasm.

Hydrocyanic Acid.—With this remedy the spasms are more persistent; there is bloating of the face and neck; eyes protrude and glisten; body bent forward or backward; pulse irregular.

Cicuta Virosa.—Especially in tetanus following injuries to the head or face. Rigidity of the lower jaw; spasms of the wind-pipe; deadly paleness of the face; eyes fixed; foaming at the mouth; body bent backward; whitish ulcers on the border of the tongue.

A dose of the first decimal (1 x) of the indicated remedy should be given every half-hour or hour according to the condition of the patient. Absolute quiet in a darkened room is essential; the nurse should wear felt slippers; allow no draught or cold air to strike the sufferer. Give abundant nourishment, milk, raw eggs beaten up, and egg-noggs through a quill if the jaws are rigid or a soft catheter run up through the nose and down into the throat, or a stomach tube. Rectal injections of liquid food may be necessary, and should be given every four hours. Warm baths and hot packs aid in relaxing the spasms. Treatment must be begun at the earliest possible moment. A wound must be thoroughly cleansed with hydrogen dioxide, if possible, then cauterized with nitrate of silver or nitric acid, and drained if necessary. A hot iron, live coal or even a lighted cigar may be used as a cautery.

Before using Homeopathic Medicines read pages 681 to 684.

Modern science has produced an antitoxin serum from the blood of an animal which has had the disease. This serum has proved valuable in treating many cases of lackjaw. All important dealers in drugs have this serum for sale; Behring's and Park, Davis & Co.'s are among the most reliable preparations.

Epilepsy.—*Epileptic Fits.*

THIS disease is termed the "falling sickness," as without warning the patient loses consciousness, and falls insensible, with convulsive motion of the limbs, distortion of the muscles of the face, frothing at the mouth. Sometimes the mouth, lips and jaws are spasmodically closed, the hands clinched, and there is a general rigidity of the muscles of the entire body. After a time this rigidity passes off, and all the muscles become relaxed; the patient then appears to be in a deep slumber, and remains so for a longer or shorter period, exhibiting weakness on awakening, but no recollection of what has occurred. Epileptics from birth or cases of long standing are rarely cured, but the frequency of the attacks can often be lessened, and the general health greatly improved. This is a discouraging disease to treat, and whatever treatment is adopted must be persevered in for months and even years. Many fits, so-called, are not epileptic but epileptoid, that is, resembling epilepsy. Read the sections on "Hysteria" and "Worms."

Belladonna.—In recent cases, especially in the very young, with much congestion of the head, and peevishness; excitability and vertigo between the attacks; jerking and starting in sleep.

Cyprum.—Trembling, tottering and failing unconscious without a cry; frothing from the mouth; violent convulsions occurring at night; pain in the head and often nausea between and after attacks.

Calcarea Carb.—Attacks followed by headache, dizziness, considerable thirst, vomiting, diarrhœa. During the intervals the sufferer is stupid, peevish, complains of headache before breakfast; face pale and puffed; perspiration, especially of the head and palms of the hands; feet cold and damp. A valuable constitutional remedy.

Indigo.—A prominent and very successful specialist in nervous diseases in Boston writes, (*North American Journal of Homœopathy*, November, 1899), "I have now been trying *Indigo* in nearly all my cases of epilepsy for the past twelve years, and the percentage of actual cures has been so very much greater than from the *Bromides* that I still continue to employ it, with ten per cent. of apparent cures, *i. e.*, patients who do not have an attack for over two years.

Also *Opium* when the convulsions occur only during sleep. *Hydrocyanic Acid* in recent cases with the frequent paroxysms, the jaws set, head thrown back, body stiffened, face flushed, foaming at the mouth; give five drops of the third decimal, (3 x), four times a day.

The *Bromide of Potassium* or *Sodium* is used by physicians of all schools of practice, but is best administered under a doctor's instruction.

Select the remedy with care and give a dose three times a day for three or four weeks at a time, then omit for a fortnight and again administer. In all cases much attention must be paid to the general health. No tea, coffee, alcohol, rich, spiced, or fried foods must be taken; meats should be used very sparingly; celery, lettuce and water cress, fresh fruits and vegetables are to be chosen, and stale whole wheat or graham bread. Water should be drunk freely, baths taken daily; days should be spent in light labor or exercise and rest out of doors; all excitement, dancing and swinging avoided; the bowels kept regulated; malt and cod liver oil or iron used to improve nutrition; good ventilation secured in the house; all sexual intercourse forbidden. If there is any tendency to masturbation, circumcision should be performed; hemorrhoids or piles must be removed.

Hysteria.

While the causes of hysteria are innumerable, stress should be laid upon the truth that a large proportion of cases are the result of an exceedingly nervous temperament and lack of proper education in self-control. For such conditions parents are directly responsible. A child has a right to be well born, and will not be if parents indulge in sexual excesses, live lives of social or other excitement, if tobacco, stimulants or drugs are used in excess, or if attempts are made to prevent conception. A child should be carefully taught self-control, and not have every whim gratified or every wish deferred to.

Other prominent causes of the development of hysteria are local irritations, uterine or rectal; defective nutrition; fright, grief, domestic worry or other excessive strain on the nervous system; too much mental application at puberty, but in many cases equally due to a child's drinking tea and coffee, sitting up late and having too little out-door life, and too much excitement. For the symptoms of this affection see page 441.

Ignatia.—Attack preceded by sensation of a lump in the throat; during the attack, alternate crying and laughing, flushing and pallor; convulsive movements of arms and legs; screaming; clinching of hands; profuse, pale urine. A dose every fifteen minutes during the attack.

Moschus, 3x.—Great anxiety; palpitation of the heart; tendency to fainting; suffocation; feeling of a lump in the throat, and constriction of chest; alternate laughing and crying; copious flow of pale urine. Give as directed under *Ignatia.*

Pulsatilla.—Hysteria, in mild, sensitive, tearful women, with menses suppressed, delayed or scanty; patient cries apparently without cause. A dose every half hour or hour.

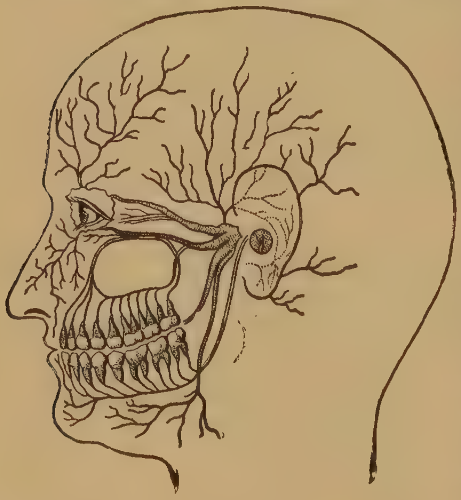
Gelsemium, 1x, an excellent remedy for acute cases of pure hysteria, especially when resulting from, or connected with, a sudden stoppage of the monthly flow from cold or fright, or when occurring in highly sensitive organizations.

Asafetida in from one-tenth of a grain to five grain doses will sometimes give wonderfully good results in controlling hysterical outbreaks, spasms or general muscular tension.

Also the tincture of *Passiflora* in twenty drop to two teaspoonful doses is most helpful in cases where sleeplessness is a marked feature.

Correction of unhygienic surroundings or habits is of the greatest importance. The patient must avoid excitement, late hours, tight clothing, sexual indulgence, stimulating food and drink, should sleep alone on a firm mattress in a well ventilated room, should be out of doors several hours a day, take up light gardening, or have not too tiring exercise. Uterine and other diseases must receive appropriate treatment. A bracing mental and moral atmosphere, sane and cheerful, is highly desirable. Treatment by means of suggestion (hypnotism so-called) benefits many cases, also electricity, massage, frequent warm baths, and a nourishing diet. During an attack loosen the clothing, give air, and sprinkle the face with cold water. Too much sympathy is harmful, but kindness with firmness is desirable.

Neuralgia.



NEURALGIA may occur in the face, head, over the eyes, in the lumbar region, along the spine, in the ovaries, between the ribs or follow the course of the sciatic nerve. Its one great symptom is a darting, cutting or tearing pain, often very severe. The principal predisposing causes in most cases are a nervous temperament, poor nutrition, overwork, and such conditions of the blood as accompany gout, rheumatism, malaria and some diseases of the kidneys.

Decayed teeth or crowding of the teeth may be a cause of facial neuralgia in its severest form known as tic doloreaux, or pressure on a nerve from a bony growth, exposure to cold or wet also excessive excitement or emotion.

Aconite.—Neuralgia after exposure to dry cold; face red and hot, pains very severe, lancinating, pulsating, and almost unbearable at night; great restlessness.

Belladonna.—This remedy resembles *Aconite* in many of its symptoms, but there is very marked sensitiveness to the slightest jar; the attacks come on with great suddenness, causing flushing of the face and throbbing pains, worse toward midnight; much mental irritability.

Colocynth.—Neuralgia from exposure to damp cold in gouty persons; tearing, drawing pains, much worse from moving muscles of face; better from warmth and rest; heat, redness and swelling.

Spigelia.—Jerking, tearing, or pulsating pain in the face, sometimes periodical, with feeling of anxiety in the heart and great restlessness; worse from motion and touch. Adapted to acute cases.

Arsenicum.—Purely nervous cases suffering from malaria, influenza or great debility; burning, agonizing pain, much worse toward night, with great restlessness and anguish; easier while moving about.

Cimicifuga.—Reflex neuralgia from diseases of the uterus or ovaries, or of rheumatic origin; sharp, lancinating pains over the eye or between the ribs, better at night; much mental depression.

Iris Versicolor.—Neuralgic sick headache involving the temples and eyes; sharp, shooting, cutting pains beginning in the morning and lasting for hours, causing burning in stomach, nausea and vomiting.

Paint the course of the nerve with the mother tincture of aconite or belladonna, or apply chloroform liniment, or cocaine. Counter irritation, even the actual cautery may be required. Either hot or cold application may give relief; regular gymnastic and breathing exercises are of value, also frequent treatments with electricity; change of air; nourishing, digestible food; baths with friction; massage, and rest from overwork. Defective teeth should be filled or removed.

In intercostal neuralgia, *i. e.*, between the ribs, where breathing is painful, a broad strip of cotton cloth may be drawn tightly about the chest and fastened, so that motion may be limited.

Sciatica.

ALTHOUGH sciatica is a true neuralgia it is thought of by most people as a distinct disease, and therefore is given this separate section. The pain follows the course of the sciatic nerve, extending from the hip to the leg and foot, and may even be felt in the inner side of the knee joint. Exposure to cold and excessive physical exertion are prominent causes; gout, muscular rheumatism and the highly nervous temperament predispose one to it. It occurs more often in men than in women. The pain is very severe in acute cases, which should run their course in about six weeks, but may become chronic.

Aconite.—Recent cases, especially if accompanied by fever; great restlessness; severe, shooting pains darting from hip to ankle.

Arsenicum.—A most important remedy, especially in chronic cases; attacks occurring about once in so often; burning pains, with anguish and great restlessness.

Rhus Tox.—Sciatica alone, or associated with rheumatism, from exposure to wet, from straining or lifting; worse in damp weather, and from lying quiet; numbness, stiffness and crawling sensations.

Refer also to the remedies under "Neuralgia," especially *Colocynth* and *Belladonna.* In young, very nervous persons *Chamomilla* has been used with success when the pains are drawing, tearing and intolerable, with a sensation as if almost paralyzed.

Sufferers from sciatica should stay in bed or in the house with the affected leg at rest, and as nearly immovable as possible; air cushions may be used; hot water bags give some relief; hot mineral mud baths are recommended, also electricity, flannels wrung out in hot water, gentle massage in cases that can bear it. Acupuncture, *i. e.*, the running of a needle into the most painful spot about two inches, and leaving it there fifteen or twenty minutes is often resorted to. Good results are obtained by applying antiphlogistine along the course of the nerve. Nerve-stretching is also another approved method of treatment, and even a cutting out of a portion of the nerve.

Nervous Prostration.—*Neurasthenia.*

NEURASTHENIA is a condition of weakness or exhaustion of the nervous system, causing various forms of mental or bodily inefficiency. The inheritance of a defective nervous organization predisposes to it, but the exciting causes are many, and are serious because our present manner of living at high pressure, demanding the most rapid forms of transit, the luxuries of life, the maximum of display and excitement has a tendency to multiply the number of cases of nervous exhaustion, and even the number of the insane. One of the most common causes of neurasthenia is worry and anxiety dependent upon competition in business, and mental strain. Neurasthenia may follow influenza, typhoid fever and syphilis; the use of cocaine, alcohol, tobacco, sexual excesses, grief, disappointments, and religious emotion.

The chief symptoms are inability to concentrate the mind; low spirits; sleeplessness, disturbed sleep, or drowsiness; great annoyance over trifles, the "irritable humor," sensation of pain in some special region of the body; pressure in the head; disturbances of vision; acuteness of thought, or absence and dullness of mind; flushes of heat and disorders of digestion.

Picric Acid.—Headache, generally in the forehead or back of the head, brought on or aggravated by the least mental effort; speedy exhaustion from least exertion; great chilliness, followed by cold, clammy sweat; patient feels "tired all over."

Phosphoric Acid.—This remedy has more irritability with the weakness than *Picric Acid;* the sufferer is highly sensitive to noise, odors, changes of temperature; exhaustion from over-work; loss of sexual power; emissions; confusion of thought; head heavy; back and legs weak; night sweats.

Silicea.—Nervous exhaustion with dread of any exertion of mind or body, but when once warmed up to his work the patient does very well. There is numbness in the fingers and back, and constipation.

Zinc Phosphide.—Brain fag of business men who grow haggard, pale, sleepless, and suffer from depression of spirits and worry; backache, and burning along the spine; crawling sensations in the legs; all symptoms worse from wine.

Ignatia.—Sleeplessness; apprehension; poor memory; trifling causes provoke weeping; loss of appetite; sense of repletion after but a mouthful of food; palpitation; coldness of the extremities; loss of sexual desire.

The general treatment must be adapted to each individual case. The "rest cure" of late years has created great enthusiasm, and patients have been kept in bed and hardly allowed to move, certainly not to wash their face or brush their teeth. In a modified form this treatment is excellent for patients exhausted by over-work, noise, confusion; by being "rushed to death." Other cases require change of scene and occupation; the man who works with his head, work he can do with his hands like carpentering, gardening and the like. Some are benefited by an ocean voyage; dwellers in the country confined to a limited routine may require the mild excitement of city life. Rest in the shape of lying down after meals, or lounging about for an hour or so is very beneficial, also early retiring at night, as much nourishment as can be assimilated, especially in the form of raw eggs, custards, milk, buttermilk, cream and butter; fat meats in small quantities at a time; bacon, lamb and chicken; chocolate and cocoa, but no tea or coffee. Massage is indicated in almost every case, and freedom from care and worry in every instance. Treatment by electricity may be indicated. The section on "Hydro-Therapy" should be read with care as baths and spinal douches are most helpful. Many cases of nervous prostration recover with far greater rapidity among strangers, as in a sanitarium, than at home.

St. Vitus's Dance.—*Chorea.*

CHOREA occurs most commonly between the ages of six and sixteen, and more often in girls and young women than in boys or men. Rheumatism, fright or other mental shock, too much school work, masturbation, worms, affections of the organs of generation, spinal irritation, or irritation or debility of the nervous system as a whole, and imitation, are the principal causes. Chorea is characterized by often wholly uncontrollable twitching and jerking of the muscles of the head, face, arms and legs; sometimes one, sometimes both sides of the body being affected. There may be pain in the head and limbs, stammering, digestive disturbances, and night terrors. A more extended description is given on page 213. This affection begins, as a rule, in the hands and arms, then involves the face, and subsequently the legs. From eight to ten weeks is the average duration of an attack of moderate severity, but cases comparatively mild and noticeable chiefly under excitement may persist for months. Recovery is the rule in children, although some chronic cases last years.

Ignatia.—Chorea from fright or other excessive emotion; great excitability or extreme mental depression; tendency to hysteria; cold, emotion, noise or light aggravate all the symptoms.

Arsenic.—Uncomplicated cases with much debility; poor appetite; loss in weight. *Fowler's Solution*, three drops three times a day for a week, increasing dose a drop at a time daily for another week, then gradually decreasing in same manner.

Cimicifuga.—Rheumatic cases, and girls at puberty with neuralgic pains or pains in the muscles; headache; sleeplessness; irritability; depression of spirits. A dose every four hours.

Hyoscyamus.—Severe local twitchings sometimes convulsive, worse after eating; disposition to laugh and perform foolish actions; mental dullness; lack of appetite or very variable appetite; great prostration. A dose every four hours.

Cuprum.—Mild cases without marked symptoms calling for some other remedy; twitchings, especially in the arms; involvement of the muscles of the throat. Dose as above.

Also *Pulsatilla* in girls at puberty who cry and laugh easily in alternation. *Phosphoric Acid* when there is great weakness and prostration; partial loss of voice, and some paralysis of the muscles of the throat; urine looks milky. *Veratrum Vir.* Bad cases, convulsive movements; rapid pulse; congestive headaches. A drop of the tincture four times a day. Consult the section on "Worms," page 804.

Every effort must be made to improve nutrition; milk, eggs, cream, bacon and cod liver oil must be given; rest in bed for several days is most desirable, and separation from other children, especially those similarly affected. Cheerful, quiet companionship without either severity or indulgence should be given the sufferer. Massage, electricity, warm salt water baths, change of air and scene during convalescence are recommended. When chorea is due to spinal irritation with much sensitiveness along the spine, pounded ice in a towel or ice-bag may be applied for ten minutes at a time; or the back sprayed with ether once a day for ten minutes.

Stammering.

THIS is but another form of Chorea, affecting the organs of speech. *Belladonna*, *Sulphur*, *Hyoscyamus*, and *Causticum* have been employed against this difficulty, and with success. The training of young boys or girls addicted to stammering, to be deliberate in their efforts to express themselves, will often accomplish more than remedies. It is remarked that stammerers can sing, or utter any sentence in song. This would indicate the propriety of enjoining upon all thus affected to practice slow and deliberate speech. *Cuprum met.* is a remedy that has cured many cases; and so has *Ferrum*, *Ignatia* and *Belladonna*. Employ each remedy singly; and repeat every three hours.

Writer's Cramp.—*Scrivener's Palsy.*

TELEGRAPHERS, engravers, book-keepers, copyists, musicians, painters, and seamstresses are liable to this annoying affection as well as writers. A peculiar spasm of the muscles of the thumb, index and middle fingers makes the use of them difficult and painful. The disease is more common in men than in women, and in middle life. There are several varieties of writer's cramp, the spasmodic, which is the most common; the neuralgic; the tremulous, and the paralytic. Treatment should not be deferred, as chronic cases are difficult to cure, and often incurable.

Arnica.—Especially in spasm due to fatigue and over-exertion. A dose three times a day.

Gelsemium.—Weakness and loss of muscular power, fatigue after slight exertion; numbness of the hand or aching of the muscles. Give as above.

Entire cessation of the employment causing the cramp is necessary. Galvanism and massage are the best forms of treatment. For slight cramp rub the hand with spirits of camphor. Use a large pencil or penholder. Improve the general health by an outdoor life; simple, nourishing food; the avoidance of excitement, and use of stimulants.

Before using Homeopathic Medicines read pages 681 to 684.

Cramps in the Legs.

The nervous, involuntary, strong contractions of the muscles of the feet or legs, which constitute cramps, often occasion much pain. They are due, as a rule, to cold, over-exertion, pregnancy, and sometimes to indigestion, and occur mostly at night.

Cuprum.—Nervous contractions of muscles upon going to bed. A dose night and morning.

Nux Vom.—Cramps accompanying indigestion, more or less numbness in the legs as if they would "go to sleep." A dose three times a day.

Veratrum Alb.—Cramps in the legs during pregnancy or from cold, with sensation of weakness and inability to walk. A dose night and morning.

Arnica.—Muscular contractions from fatigue. A dose every two hours.

Pressing the foot firmly against the floor or wall, or holding it tightly may give relief, also rubbing the legs with spirits of camphor or equal parts of warm olive oil and chloroform. Rub the legs often and keep them warm and dry. Avoid all exposure to cold and damp.

Mental Derangement.

In a work of this kind it is not possible to describe all the various forms of mental affections, or to give the treatment in such detail as to make it possible for every case to receive benefit. But even the briefest reference to the subject would be incomplete, without calling attention to the great responsibility which rests upon every individual to lessen in themselves and in others the possibility of the development of these distressing and often incurable affections. When it is remembered that every thought and emotion leaves an indelible impression upon the substance of the brain, the most delicate and intricate structure known; that many avoidable diseases react most disastrously upon the brain and important nerve centers, and that the tendency to insanity is transmitted from parents to children through generations, it must be plain to the most thoughtless that every person is in duty bound to aid in making any form of mental derangement as nearly unknown as modern conditions of civilization permit.

The causes of defective mentality and insanity are largely preventable. That children shall grow up and end their lives in insane asylums it is not necessary that insanity should be in the family, as the phrase is. The offspring of drunkards, syphilitics or those who have lived licentious lives, or are confirmed users of drugs such as cocaine and opium, or children conceived with one or both parents under the influence of liquor, or during lust, rage or fear, will in all probability exhibit some mental as well as physical stigma, may be mentally defective if not idiots or imbeciles, and may eventually become insane. From this class some of the worst criminals come, committing the most revolting crimes.

The state of mind of the mother when carrying the child is of the greatest importance to its future welfare.

Some of the causes during the life of the individual predisposing to some form of insanity are: Defective nutrition; injuries to the brain; the cramming system in schools; masturbation; dissipation; sexual excesses; disappointment of natural ambition, or, on the other hand, limitless ambition allowed to interfere with normal, healthy living.

All attempts to care for the mentally deranged must include general treatment. No drugs will take the place of the many other agencies now used by all qualified practitioners of medicine. It is thought wise to place these instructions here, that whatever the kind or degree of derangement in a given case the reader may have to deal with, he may first avail himself of these suggestions.

A distinguished alienist of Johns Hopkins University has said and most truly: "The first requisite in the treatment of any case of ordinary insanity is a good nurse; the second, a good cook; and the third, good air with pleasant surroundings." Patients that are quiet and harmless can be treated at home, and many other cases if competent nurses can be procured to attend them night and day. All cases require a quiet, kind manner, fearlessness and self control in the attendant; gentle discipline, and a watchfulness not too obvious. Nutrition is of great importance; eggs and milk are the best foods, and are generally well borne in the form of egg-noggs, when there is no organic disease of the brain, or egg and milk, raw eggs, soft custard, plain milk warmed for patients having little vitality; often ten or a dozen eggs, and several quarts of milk can be taken in the twenty-four hours, all depends on the digestion. Other valuable foods are chicken, clam, oyster and other broths, but not an excess of meat soups; gruels of rice, barley, oatmeal and other cereals, and vegetable soups, especially celery and bean soup; vegetables, especially lettuce and spinach, and fresh fruits if they agree. Patients may have to be fed by nourishing rectal injections, or food given in small quantities by means of an ordinary soft bulb syringe through a soft rubber tube passed into the nose and beyond to the stomach. During convalescence the nervous and excitable patient will be benefited by the use of cream, butter, salad oil and cod liver oil. Lamb, fowls and sweet breads are the best meats. Encourage the patient to drink a great deal of water. Rest in bed is of great service to patients much debilitated or exhausted. Warm sponge and tub baths are beneficial, the latter followed by the use of cooler water and friction, also rubbings with cocoanut oil, ninety-five parts and hypericum tincture five parts. Next to rest comes amusement and not exhausting exercise; gardening can be recommended, also music, dominoes, billiards. The use of well chosen music as a healing agent is now receiving much recognition.

When restraint is required in an excitable case it should be as mild as is consistent with effectiveness. If a patient in bed insists on getting up and is not violent, put him gently back again, encouraging him to remain there and acting as if you expect he will. It is really surprising what an effect such treatment often exerts when pursued by an attendant fully master of the situation. If necessary a wide band of cotton cloth may be secured about the upper part of the body, and a strip of cloth on each side fastened to the bed rail. A "protective sheet" so-called, is applied in addition to the body bandage, and leaves only the head and neck exposed; fasten the ends and sides to the bed rails by tapes sewn to the sheet. Canvas mittens padded with cotton or cotton batting will keep a patient from injuring himself or tearing his clothes, etc. A very violent patient can be rolled up from neck to heel in sheets, being then as harmless as an Indian papoose. Never show fear of an insane person, and never trust one.

Melancholia.

Excessive gloom, despondency and apprehension are the principal characteristics of melancholia, also a concentration of the patient's thoughts upon himself. Although this disease is not peculiar to either sex, women are more subject to it than men, especially at the change of life. Poor nutrition associated with business reverses, grief, worry, actual want, severe disappointments and hereditary tendency are the common causes. Self-abuse and any form of dissipation predispose to melancholia. Melancholia may occur in childbirth or in nursing mothers when exhausted from prolonged lactation, and may follow the grippe. Suicidal thoughts often accompany this affection, but in simple cases the patient's will power is sufficiently strong to counterbalance them; in acute cases, however, the sufferer should be closely watched. Melancholia may develop into mania, or complete recovery may ensue.

Nux Vom.—Slow pulse; lack of appetite; constipation; great depression of spirits; obstinate silence; involuntary sighing and moaning.

Veratrum Alb.—Great anxiety, despondency, and despair; distrust of everyone; cold sweat all over body, moaning during sleep; frightful dreams; patient fearful and easily startled.

Cimicifuga.—Melancholia after childbirth, with great depression, suspiciousness and apprehension of going crazy; disturbance of menstrual function; rheumatic pains in head and back.

Also *Ignatia*, an important remedy in recent cases, especially from sorrow or disappointments, where patient often weeps or seems full of suppressed grief; sighs and mopes. *Pulsatilla* in weak, feeble, tearful women, with uterine difficulties, disordered menstruation or leucorrhea. *Arsenicum*, chronic cases, with intense anxiety and restlessness; fear of being left alone; general debility, often emaciation; much depression; tearfulness. *Natrum Mur.* attacks of violent weeping; patient sheds tears copiously, and more the more attempts are made to quiet her; if contradicted she becomes irritable.

It should be borne in mind that one of these remedies may be equally well indicated for melancholy and depression of spirits, when true melancholia has not developed, but when the general condition calls for medical as well as moral and hygienic treatment with a view to the prevention of more serious disease.

Mania.

THE term mania is from the Greek, and means "I am furious." It will readily be inferred from this that the mental faculties of the sufferer exhibit a morbid exaltation, and increase of the imagination, with disordered ideas, and disturbances in the centers of the brain which govern motion. There is a mild form characterized chiefly by loquaciousness, restlessness, goings to and fro without object, slight incoherence, unreasonableness, and inability to perform mental work. This state may pass into a more typical form of exaltation, then frenzy, and finally a decrease in the acute and most alarming symptoms. Both mild and typical mania are generally preceded by digestive disturbances, headaches, exhaustion, despondency, unrestful sleep or sleeplessness, followed by excitability, extravagant fancies and ideas, delusions such as conviction of possessing great wealth, positions of high honor, or the patient may have pleasant or frightful visions.

Sufferers from mania often talk with great sense on many subjects; some cases proceed to recovery, but subsequent attacks are common, also the merging of mania in dementia, which is a loss of mental vitality, sometimes to the point of imbecility or, in the aged, dotage. Cases of mild mania with periodical excitability are the most common, and can be treated at home. Causes other than those given under "Mental Derangement," are acute diseases, such as pneumonia and typhoid fever; starvation; organic diseases of the brain; epilepsy; religious excitement.

Aconite.—Acute mania attended with fear, despondency and apprehensions of future calamity; anxious lamentations, with heat of the face and head, palpitation of the heart, and coldness of the extremities; fear of death.

Belladonna.—Hot, flushed face; dilated pupils; throbbing arteries; much restlessness; spasmodic attacks of rage and fury, biting, tearing clothes, striking anyone nearby, and again laughing, singing and even dancing. The *Belladonna* patient is aggressive and destructive and frequently has suicidal tendencies.

Hyoscyamus.—Hysterical insanity in excitable, nervous women; religious mania; patient talkative, frequently good-natured, but may have savage outbursts, with obscenity and exposure of person; fears being poisoned; makes ludicrous gestures and disarranges clothing. The use of this remedy is not confined to women.

Stramonium.—Furious outbursts; incessant, incoherent talk; patient tries to escape; has horrible visions; bites, scratches and screams; is in great fear from his imaginings; has fits of wild laughter, and for days may seem quite busy and cheerful with his own fancies; religious mania.

Tarantula.—Cunning, crafty, mischievous patients, subject to sudden fits of destructiveness, will then laugh and apologize, but must be constantly watched.

Nux Vom.—A valuable remedy in subacute mania, where the patient is suspicious, and thinks he is persecuted or wronged; is obstinate, cross; even ugly; often morose and taciturn; wants to die because life seems insupportable.

Veratrum Alb.—Much physical as well as nervous prostration; wild vagaries; religious excitement, persistent raging with attempts to cut and tear clothing; weeping, howling and screaming over fancied misfortunes, then almost collapse of body and mind; weakness of heart's action; coldness of skin; conviction of being damned.

Other valuable remedies are *Cantharis* with many of the *Belladonna* symptoms, but, in addition, great sexual excitement with imperative desire for gratification. *Opium* when the patient's face is distorted during furious rage; head and face swollen; eyes protrude; lips bluish-red; rage followed by dullness and stupor. *Cuprum* in insanity characterized by full, quick pulse; redness of the eyes; wild looks, incoherent speech and rage, paroxysms terminating with profuse perspiration. *Rhus Tox.* in acute cases having a rheumatic history, and where the patient is extremely restless at night; fears he is being poisoned; has suicidal tendencies. *Arsenicum*, also, has a disposition to commit suicide and the patient is restless, agitated, indifferent to life; the countenance is haggard and anxious, the tongue red, dry and tremulous. *Ignatia* is peculiarly adapted to the hysterical form of insanity with the symptoms given under "melancholia."

Pulsatilla has fear of death and silent anguish, a weeping mood and great depression of spirits, yet with a disposition to commit suicide. The *Aurum* patient thinks he was not intended for this world but fears he is irretrievably lost as regards the next; is very melancholy, thirsty; has cramps in the stomach and bowels, and wants to commit suicide.

In summing up these remedies the suggestion may be offered that in cases of *Religious mania* one should think of *hyoscyamus, stramonium, veratrum alb.*, and *aurum;* in *Suicidal mania* of *belladonna, arsenicum, aurum, nux vom.*, and *rhus tox.*; in *Hysterical mania, of ignatia* and *pulsatilla;* in *Mania with Fury* of *belladonna, hyoscyamus, stramonium, cuprum, opium* and *veratrum alb.*, and that in *aconite* the great symptom is fear, and in *cantharis,* sexual excitement.

Dementia.

DEMENTIA is a term denoting a partial or total loss of the mental faculties; in the latter case it resembles idiocy. Dementia may occur independently of any other form of insanity, or may follow melancholia or mania; it may be acute or chronic, but the latter is the common form. Recovery seldom takes place. The section on "Dementia," page 221, should be read, as it gives a short description of the symptoms of this disease. The general treatment under "Mental Derangement" must be followed in these cases. Masturbation and epilepsy are common causes of dementia, also the prolonged use of alcohol and degenerative changes in old age. The treatment of dementia with masturbation must include local treatment when necessary, circumcision and great cleanliness of the parts, also moral, medical, dietetic and hygienic measures.

Anacardium.—Great weakness and loss of memory; irresistible desire to curse and swear; hears voices and smells odors not present; great sleepiness during the day.

Phosphoric Acid.—Absolute indifference to surroundings; disinclination to talk, with confusion of mind and dullness of brain; weakness in back and limbs; loss of memory; flow of urine very profuse. Dementia due to masturbation or from sexual excesses.

Silicea.—Epileptic dementia in scrofulous children, with constant headache and sensitiveness of the spine; jerkings of the limbs during sleep; constipation; the body poorly developed.

Picric Acid.—Sexual excitement and masturbation; weakness of the back and legs; severe pain in back and back of head; burning along the spine; patient easily prostrated.

Hypochondria.

WHILE hypochondria resembles melancholia and sometimes hysteria, in its true form it is a distinct disease which may be defined as "mental depression, without adequate cause; and taking the shape, either from the very first or very soon, of a conviction in the patient's mind that he is the victim of serious bodily disease." All his thoughts are centered on himself. A good description of this disease is given on page 224. An inherited predisposition is a frequent remote cause of this condition, and favors its development in persons of dissipated habits, given to intemperance, sexual excesses, masturbation, over-eating, or other vices; or persons suffering from great anxiety or severe mental shock.

Nux Vom.—A remedy always to be thought of in hypochondria in those of sedentary habits, exercising but little, using the head a great deal, over-eating or drinking, indulging in rich or highly spiced food, easily irritated, troubled with flatulence and constipation.

Staphysagria.—Hypochondria due to masturbation, patient moody and taciturn, full of anxious imaginings about his health, etc., has many queer notions; or the memory is weak, the mind confused, the urine deep red or yellow; seminal emissions.

Stannum.—Constant weak, weary feeling of mind and body, although the patient feels better from walking about; has many ailments and exaggerates them all, constipation; pain in the abdomen; night sweats.

Aurum.—Especially serviceable in men; extreme melancholy, sullenness and disinclination to speak; peevishness; vertigo; dwells on religious subjects.

Arsenicum.—Burning pains in stomach; great depression; intense anxiety and concern about bodily condition; sleeplessness or sleep disturbed by bad dreams; exhaustion; poor nutrition.

Also *Asafetida* in hypochondria with flatulence, torpor of the liver, indigestion, constipation, loose cough and great depression of spirits. *China* when the patient has a fixed idea he is unhappy and persecuted; is stubborn and unreasonable; digestion slow; may have watery diarrhœa; throbbing headache with ringing in ears; after sexual abuse. Any of the above remedies may be given three times a day.

Imbecility.

CHILDREN may be born imbeciles, or develop imbecility after birth. With care and patience many of these poor unfortunates may be greatly improved both mentally and physically. The intermarriage of those nearly related to each other, and alcoholism, epilepsy or syphilis, in one or both parents accounts for many born imbeciles. Injuries to the child's head at birth, a blow or fall afterwards, imperfect nutrition, drugging with soothing syrups, infectious fevers, masturbation, fear and fright, and organic diseases of the brain are causes of defective mentality. Male children are more prone to be feeble-minded than female. The development of the brain and its functional powers is incomplete. Children thus afflicted may be thought blind or deaf in infancy when they are simply incapable of responding to the usual stimulation of light, noise, and color; but sometimes, on the other hand, children whose eyesight is defective, are thought to be feeble-minded when they are not. Imbeciles are generally vain, irritable, mischievous, hard to control, sometimes destructive, cannot fix their attention on one thing, may have difficulty in walking or in speaking distinctly, and exhibit many bad habits.

If imbecility is the result of epilepsy, refer to the remedies mentioned under that subject. When the only indication is the feeble, undeveloped mind *Zinc Phos.* is recommended three or four times a day, and its use continued for months. *Phosphorus* is a remedy well indicated when there is apathy, indifference, stupidity, indisposition to any exertion, mental or physical; slowness of comprehension. Imbecility with great nervousness and masturbation, or softening of the brain. *Sulphur* as a constitutional remedy for the mentally defective when dirty and untidy in all their habits; irritable; selfish; depressed; poor sleepers at night, drowsy during day; sensitive to cold water and cold air. Give a dose every morning and one of *Nux Vom.* at night when with some or many of the above symptoms the patient is constipated, has indigestion and masturbates. *Arsenicum* for poorly nourished patients given to sexual excesses; sleepless or starting in sleep; restless and fearful when awake; for those who have had epilepsy or diseases lessening vitality.

A dose of the indicated remedy may be given three times a day unless otherwise specified. Modern methods followed by qualified practitioners of the leading schools of practice, in dealing with the mentally deficient, include personal care and teaching by attendants of a superior class and, if possible, by those specially trained in this work. There are now admirable homes and institutions, private as well as public, where this class of cases receive judicious instruction adapted to the individual; by this is meant modified mental training manual training, systematic exercise out of doors and in the gymnasium, baths, electricity, massage, wise supervision of morals and personal habits, and patient and persevering guidance. Under such treatment surprising progress is often made in apparently hopeless or most discouraging cases, and the lives of these unfortunates so often bearing the sins of their fathers, made infinitely brighter and happier.

Before using Homeopathic Medicines read pages 681 to 684.

LIST OF REMEDIES.

Aconite.
Arthusa.
Agaricine.*
Agaricus.
Aloes.
Alumina.*
Anacardium.*
Antimonium Crudum.*
Antimonium Tartaricum.*
Apis Mellifica.
Apocynum Cannabinum.
Apomorphia.
Argentum Metallicum.*
Arnica.
Arsenicum Album.
Arsenicum Iodatum.*
Asafœtida.
Aurum.*
Baptisia.
Baryta Carbonica.*
Belladonna.
Berberis.
Boracic Acid or Borax.
Bromine.
Bryonia.
Calcarea Carbonica.*
Calcarea Iodata.*
Cannabis Sativa.
Camphor.
Carbo Animalis.*
Carbo Vegetalis.*
Causticum.
Chamomilla.
Chelidonium.
Chenopodium.
Chimaphilla.
China.
Cicuta Virosa.
Cimicifuga.
Cina.
Clematis.
Cocculus.
Collinsonia.
Coffea.
Colocynthis.
Conium.
Copaiva.
Crotalus.
Croton Tiglium.
Cuprum Arsenicosum.*
Cuprum Metalicum.*
Digitalis.
Drosera.
Dulcamara.
Erigeron.
Eupatorium Perfoliatum.
Euphrasia.
Ferrum Macriaticum.
Ferrum Phosphoricum.*
Fluoric Acid.
Gelsemium.
Glonoine.
Graphites.*
Hamamelis.

Remedies that are starred should be purchased in the form of triturations or tablets.

Hepar Sulphuris.*
Hydrastis.
Hydrobromic Acid.
Hydrocyanic Acid.
Hyoscyamus.
Hypericum.
Ignatia.
Indigo.*
Iodide of Antimony.*
Iodine.
Ipecacuanha.
Iris Versicolor.
Kali Bichromicum.*
Kali Iodatum.*
Kali Muriaticum.*
Lachesis.
Lycopodium.
Manganum.*
Magnesia Phosphorica.*
Mercurius Corrosivus.*
Mercurius Iodatus.*
Mercurius Solubilis.*
Mercurius Vivus.*
Mezereum.
Millefolium.
Moschus.*
Muriatic Acid.
Natrum Muriaticum.*
Nitric Acid.
Nux Vomica.
Opium.
Pareira Brava.
Passiflora.
Petroleum.
Phosphorus.
Picric Acid.
Pilocarpine.
Plantago.
Plumbum.
Podophyllum.*
Pulsatilla.
Rhus Toxicodendron.
Sanguinaria Canadensis.
Santonine.
Scutellaria.
Sepia.*
Silicea.*
Spigelia.
Stannum.*
Stannum Iodatum.*
Staphysagria.
Stramonium.
Strychnia.*
Sulphur.
Tarantula.
Tartar Emetic.*
Tellurium.*
Teucrim.
Terebinthina or Turpentine.
Thuja.
Urtica Urens.
Veratrum Album.
Veratrum Viride.
Zinc Phosphide.*

Remedies that are starred should be purchased in the form of triturations or tablets.

Osteopathy.

THE SCIENCE AND ART OF HEALING AND THE CURING OF DISEASES WITHOUT THE USE OF DRUGS OR SURGERY.

ANDREW STILL, M.D., discoverer of the science of Osteopathy in 1874 and the founder of the American School of Osteopathy, claims to have discovered certain laws of nature and methods of cure within the human system itself, and defines it as a scientific knowledge of anatomy and physiology in the hands of a person of proper intelligence and skill, who can apply that knowledge to the use of man when sick or wounded by strains, shocks, falls or mechanical derangements of any kind to the body. Also that the practitioners must have a masterful knowledge of anatomy or structure of the human body, and physiology, or the functions of the various tissues, fluids and organs, also a thorough knowledge of the chemistry and physics of the human mechanism.

Claims of Osteopathy.—Osteopathy claims that the natural circulation of the blood is health and that disease is caused by the disturbance of the flow of blood in some part or the whole of the body.

Success Claimed by Osteopathy.— The osteopathist gets his success with all diseases by the proper adjustment of the different organs such as relieving the bowels of fecal matters that are laboring to leave the body by the natural channels, and the obstructions that are caused and the derangements that occur may be eliminated by the proper massage of the parts affected. In fact the osteopathist is recommended to proceed as if he were a mechanic and on that the science is based.

Treatment.—The different secretions of the body are stimulated by massage of the parts that either promotes the secretion directly or irritation of the nerves that promotes them indirectly, and the great point upon which most of the time of an osteopathist is spent is the spine, as from that structure the nerves emerge to migrate all over the body.

By disease, according to Still, he means anything that makes an unnatural showing in the body like the overgrowing of a muscle, gland, hot, cold or anything found not necessary to life. Should these things occur, the osteopathist finds the basic cause and proceeds by his manipulation to clear the path for the resuming of the blood supply which by stasis has caused this unnatural condition to occur.

In the treatment of the diseases of the lungs, such as pneumonia, consumption and bronchitis, the parts that supply the blood are attacked in the expectation that an increased power of vital force, together with clearing away of the products that have been used up, will result in nature taking the opportunity to remove the disease.

If the cause of rheumatism in addition to the stiffening of the joints and the painful areas surrounding them can be traced to an accumulation of dead substances circulating in the body at the point where the nerves that supply the blood vessels going to that part emerge from the spine, there is where the manipulation of the part is attempted.

In sprains of any locality the proper massage and manipulation of the muscles at that point will cause an increased flow of the blood to the part and hasten the reparative processes.

In breaks of bones, of course, the same manipulation cannot be attempted without being liable to dislodge the fragments but as soon as proper healing of the bones has commenced, the nourishment can be encouraged and quickness of repair occur.

In meningitis of the brain or spine they claim as much for it in that region as they do in the rest of the body.

PROCESSES OF THE HYDROPATHIC TREATMENT.

For the description of the hydropathic appliances contained in the following pages, I am indebted, in substance, to the "Hydropathic Family Physician," by Joel Shew, M. D., author of several popular works upon the principles and practice of hydropathy. I have not uniformly adopted his exact language, which is not always the best he might have chosen to express his thoughts.

Priessnitz is admitted to have been the originator of the hydropathic modes of treating diseases. He was an unlearned man, though he had original powers of mind; and, imperfect as the treatment is, he benefited his race by conferring it upon the world.

At first, and for some time, baths were made too cold, and were continued too long; the result was much injury to the patient in many cases. Time and experience have brought a better adaptation of the temperature and continuance of the water appliances to the symptoms, constitution, and temperament of each patient. Formerly, weak, exhausted, and nervous persons, not less than the full-blooded and strong, were put into the wet-sheet pack, and reduced near to death's door; and there is reason to believe that in some cases where the practice is in ignorant hands, this barbarity is not wholly discontinued. The practice, however, is now mainly in better hands; and although I by no means admit its sufficiency as a system of remedial agencies, I am persuaded it is doing some good. Used in connection with the ancient system of regular medicine, which is the joint product of time, science, and experience, the water treatment, moulded and modified to the circumstances and strength of the patient, is an auxiliary of no mean power. As such, I accept it. As such, it is received by hundreds and thousands of regular practitioners throughout the world. Further than this, it never can or will be generally received. By pushing it beyond this, its rightful and honored sphere, its friends only limit its progress and injure its influence.

Division of Baths.

On no one subject connected with hydropathy has there been more "confusion of tongues," than concerning the temperature of baths

Both in books and in popular language, among physicians as well as laymen, have words been used, sometimes confusedly, and at other times without any meaning whatever. Orthodox medical works, as well as the *un*orthodox, come under the same category of error. A few simple explanations on this head, properly made, will be sufficient for all practical as well as scientific purposes.

The simplest and most natural division of baths is into *cold*, *tepid*, *warm*, and *hot*. These are all terms of every-day life, and are fully sufficient to guide us in the selection of any and all the multiform uses of water which hydropathy teaches. I admit, however, that when we wish to be especially explicit, the actual thermometrical temperature should be mentioned. *Hot* baths, I maintain, have no proper place in hydropathic practice. He who resorts to them either does not at all understand the true principles of the Water-Cure, or is guided merely by the whims or caprices of those who employ him.

But whatever words we use to designate the different baths, there is one objection, which is, that all such terms are necessarily arbitrary in a greater or less degree. What appears to one person cold, may to another appear tepid, or warm, or even hot. Thus it is said that on a road over the Andes, at about half way between the foot and the summit, there is a cottage in which the ascending and descending travellers meet. The former, who have just quitted the sultry valleys at the base, are so relaxed, that the sudden diminution of temperature produces in them a feeling of intense cold; while the latter, who left the frozen summit of the mountain are overcome by distressing sensations of extreme heat. If on a cold winter's morning we go from a warm bed to a bath of sixty to seventy degrees Fahr., the water appears cold. If we then plunge immediately into water which is at about the freezing point, and then return again to the water at sixty to seventy degrees Fahr., it appears warm. When the temperature of the atmosphere is at fifty-five degrees Fahr., in November or October, in this latitude, and the body of a comfortable degree of warmth, and we take three basins of water at sixty, seventy, and eighty degrees Fahr., placing one hand in the water at sixty degrees, the other in that at eighty degrees, letting them remain thirty seconds in each, and then immerse them both in the water at seventy degrees, it appears to one *cold*, to the other *warm*.

But we can arrive at rules which approximate so nearly to the actual truth, that they will serve us, as before remarked, for guides in all practical and scientific purposes.

The Cold-Bath. — With a majority of persons, and at most seasons of the year, water at from seventy to eighty degrees Fahr. downward, gives, when immersed in it, a sensation of coldness. The spring-water of all countries furnishes what may therefore be called a cold-bath, although there will be a range of many degrees variation in what we term cold.

The Tepid Bath. — The word *tepid* is from the Latin *tepeo*, to be *warm*. The true English meaning of the term, however, is, according to Mr. Webster, *moderately warm*, or *lukewarm;* in other words, water which, when a person is immersed in it, gives a kind of indefinable sensation, one which, coming properly under the term neither *cold* nor *warm*, is said to be *tepid*. This temperature will be found to range at from eighty to ninety-two degrees Fahr.

The Warm Bath. — The term *warm* is generally well understood. It means that temperature of water which is peculiarly agreeable to the sensations. Fresh-drawn milk or blood we say are warm. The temperature of water which will cause this sensation varies from ninety-two to ninety-eight degrees Fahr.

The Vapor Bath. — The temperature of the vapor of simple water varies from about ninety degrees Fahr. upward, according to the heat of the water, and the space through which the vapor passes.

The Hot Bath. — The term *hot* is also expressive of its proper meaning. If the body is immersed in water above blood-heat, it causes an uncomfortable sensation, which we designate as *hot*. Hot water is a disturber of the vital functions, particularly if the whole body is immersed in it. Hot baths, therefore, should be used, if ever, only in a most urgent necessity. Hot water, in no form whatever, entered into any part of Priessnitz's treatment.

Having thus explained the temperatures of the different divisions of the bath, it is proper to state them in a tabular form, the better to aid the memory. They are as follows: —

Cold-bath, from freezing point,	32 to 85° F.
Tepid "	80 to 92°
Warm "	92 to 98°
Vapor "	90° and upward.
Hot "	above 98°.

I now propose to explain somewhat minutely, and at the same time with a due regard to the needs of the non-professional reader, the physiological effects of each of the several kinds of bath, and I here respectfully premise that any one who attempts to practise the water treatment without having in his mind clear notions upon this subject is, to say the least, as much a "groper in the dark" as he who attempts the practice of drugs of which he knows nothing, upon the living body of which he knows less. How can a man be trusted in water treatment if he cannot tell beforehand what effect a bath is to have; and this he cannot, if he does not fully understand the meaning of the terms which I have here explained.

Effects of the Cold Bath. — The effects of the cold bath are properly spoken of under two heads, the *primary* and the *secondary*. The terms are sufficiently expressive of their meaning. The first are those which take place at the time of the immersion; the second, those that occur later, constituting what we understand by the term *reaction*.

Immediately on immersion in cold water, the bather experiences some acceleration of respiration and the heart's action, although the pulse becomes at the same time smaller and weaker. Very soon, however, the *panting*, if I may so call it, passes off; the temperature of the body is found diminished, the surface paler than natural, the skin taking on that form of appearance known as "goose-flesh."

The first effect of cold water applied to the body, generally, is to abstract a certain amount of heat from the surface, to constringe the capillary vessels, and to force the blood inward. Now, as the living body possesses the remarkable property of maintaining its temperature at very nearly the same point, whether it is in a colder or hotter medium than itself, the vitals at once set to work in restoring the caloric abstracted by the contact of the water; and as the functions of circulation and calorification go necessarily together, the vital power, acting through the heart and blood-vessels, attempts a return of the blood that had been forced inward by the coldness of the water.

This is what we call reaction. If the individual is sufficiently strong and well stocked with vitality, the blood is quickly returned to the surface and to the extremities (which are always most liable to become cold, being farthest from the heart), constituting what is termed *good*, or *vigorous* reaction. But if the surface and extremities continue to remain unwarmed by this return of the blood to them, as happens in the case of feeble persons, there is said to be *poor*, or *insufficient* reaction. It would then be necessary to give some warming medicine to start the blood circulating.

Effects of the Tepid Bath. — The tepid bath, which we have seen ranges from eighty to ninety-two degrees Fahr., produces effects analogous to those of the cold bath, only not so lasting and permanent. It is especially useful in the treatment of infants and children, and in all cases where the reactive energy is feeble. If in any case we are in doubt as to whether the cold bath is admissible, the tepid form will be a milder measure, and at the same time serve as a test in venturing upon the cold. The tepid bath may be continued longer at a time, which in some cases will be found an advantage.

Effects of the Warm Bath. — There is among hydropathic physicians, if I am not mistaken, too great a fear of warm applications on the part of some, while others go to the opposite extreme. Mark, I speak of *warm* applications. *Hot*, as before remarked, have no proper place in hydropathy, — a rule to which the exceptions are few.

The warm bath, as before remarked, ranges from ninety-two to ninety-eight degrees Fahr. It is not the *most* useful of the hydropathic resources, but *one* of the most useful, as I shall endeavor hereafter to show.

Among the ancient Romans the warm bath was not considered as a means of luxurious indulgence that tended to weaken the vital powers, but a means of refreshment for the wearied traveller, and of preparing him for the repast and the enjoyment of other rites of hospitality. The effect of the warm bath is not one of debility, as many suppose, but, on the contrary, it is a sedative, lowering the heart's action and the circulation, and tending to repose rather than excitement.

Effects of the Hot Bath. — The hot bath, before remarked, is one which is above the temperature of the blood, ninety-eight degrees Fahr. It was laid down as a precept by Hippocrates, that a bath enfeebles when the heat exceeds that of the body immersed in it. The truth of this precept has often been verified in practice.

I do not wish to be understood as affirming that hot applications can never be made with benefit to the body; on the contrary, heat applied to a part locally may be of service, although I am inclined to believe that even in those cases where heat acts in a beneficial way, some other form of hydropathic appliance can be used more beneficially. I make, it will be remembered, a broad distinction between the terms *hot* and *warm*.

Sea-Bathing.

As regards temperature, sea-bathing comes under the general head of cold baths. Sea-water, however, at those seasons of the year when sea-bathing is resorted to, is of a moderate degree of coldness, varying in this latitude not much from seventy degrees Fahr.

In order to appreciate fully the effects of sea-bathing upon the system, a number of things are to be considered.

Sea-water differs in its effects from common water by its possessing greater density. This circumstance, however, is not of so great importance as that of the stimulating nature of the minerals it contains. The saline ingredient is a powerful stimulant and even irritant of the skin. On account of this property, it is found that an exposure to the action of salt water is not so liable to cause ill effects as that to fresh. The salt causing a degree of heat upon the surface somewhat higher than that of the natural state, the system is for the time shielded from the action of cold. It does not follow from this, however, that a person could live longer immersed in sea than in common water, any more than it follows that because alcohol for a time increases the animal temperature, life can, under circumstances of great exposure to cold, be the longer preserved. This it is now well known is not the case.

An advantage of sea-bathing in the hot season is, that the air at the sea-shore is cooler than on land. That our climate in summer is too hot for the most favorable development of health is proved by the great increase of mortality, not only in our cities, but in other parts, during the hot season. The European cities, with all their numbers of inhabitants, dampness, narrow streets, intemperance, pauperism, etc., would naturally be expected to show a higher range of mortality than our American cities, but such is not the fact. Even New York, with all its natural advantages, is as sickly, probably, as any of the British or European cities. This, it is agreed on all hands, must be owing in great part to the intense heat of our summer months.

The manner of taking the salt-water bath has some peculiarities which are favorable to health. It is, in the first place, in the open air, which, if the weather is favorable, that is, neither too hot nor too cold, is always a great advantage. Other things being equal, a bath in the open air is always attended with a better reaction and a greater degree of invigoration than one within doors.

In the second place, sea-bathing is usually and almost necessarily connected with exercise both before and after the bath, circumstances which are always highly favorable to the action of cold water. So beneficial, indeed, is exercise taken in this way, that it would be difficult to determine which of the two — the exercise or the bathing — is the more beneficial. In connection, the two act reciprocally upon each other, each rendering the other doubly beneficial.

Injections.

THE term *injection* implies the act of throwing a fluid into some cavity of the body.

In Water-Cure we inject water more frequently into the bowels than any other cavity. This kind of injection is also called *enema*, or *clyster*.

Most people have so little confidence in simple water, that if a clyster is administered to them, thay have no idea that it can operate in so effectual a way as it usually does. Years ago, when the water treatment was much less known than at the present time, I have been suspected of having secretly put some cathartic substance in the water, "for," said the patients, "how is it possible for *water* to act in this way?"

A great variety of injection-instruments have been invented. Some of these are very convenient and useful; others are got up on mere speculation, and are but little worth. Every family, at least, ought to have a good injection-instrument. A lady's toilet is never complete without it. A good article is either manufactured or sold by most surgical-instrument makers and druggists.

Modus Operandi of Water.

IT is often objected to hydropathy, that water, being but one agent, cannot be made useful in all diseases. I propose here to make some remarks on *the modus operandi of water*, in which I shall endeavor to explain, not only to the scientific scholar, but to the ordinary reader, that water is capable of being made available as a remedy, — and that powerfully too, — in a great variety of ways. It then acts: —

1. **By its Presence.** — Water, as we have seen elsewhere, composes the larger part of the living body, and that without its presence in a large proportion in the living system, the vital processes cannot for a moment go on.

2. **By its Coldness.** — Cold, within proper limits, preserves and augments life, while heat tends to debility and decay. In proportion as the animal heat is diminished in the different classes of animals, the less is the want of air felt. If in a puppy the eighth pair of nerves be divided, producing a closure of the glottis so that no air can enter its lungs, the animal dies in half an hour, if kept at an ordinary temperature. But if the animal is benumbed with cold it survives the operation for a whole day. Frogs, in the summer, when the temperature of water is elevated, are obliged to come often to the surface for air. But in winter, when the water is colder, they live almost entirely under its surface. A cholera patient in collapse, a person who has been stifled by foul gases, one in the sinking stage of a fever, or fainting from loss of blood, or in any way asphyxiated, desires always coldness rather than heat. It may not be possible in the present state of science to explain these phenomena; but undeniably we have the facts.

3. **By Endosmosis and Exosmosis.** — Animal membranes have the power of *absorbing* liquids, — called *endosmosis*, or *imbibition*, and of throwing them out, *exosmosis*, or *transudation*.

If we take a portion of the intestine of a chicken, tie one end, nearly fill it with milk, then tie the other end, and lastly immerse it in a tumbler or other vessel of pure water, we find that in a short time the milk passes out of the intestine into the water, and the water inwardly mingling with the milk. This process goes on till the fluid within and without the intestine becomes one and the same. This is a familiar illustration of the principle in question.

4. **By Dilution.** — Water is the greatest diluent in nature. There is no substance which is at all comparable to it for penetrating the myriads upon myriads of capillaries that exist in all parts of the living structure. When the fluids become thick, viscid, and filled with impure matters, as is usually the case to a greater or less extent, in disease, it is an important object to dilute these matters. For this purpose water is the only available remedy.

5. **By its Tonic Effect.** — Water is the greatest of all tonics, and possesses the valuable property, not of wearing out, but of increasing in its good effects.

6. **By its Excitant or Electrical Power.** — A man feels dull and stupid from excessive bodily or mental labor, from excessive alimen-

tation, or spirit, or tea and coffee drinking, with the blood all crowding up into his head. We apply the well-wrung rubbing wet sheet one, two, or three times, to his surface, according as he may need, and he at once perceives a most wonderful change for the better. Or a man feels of a morning dull and stupid, with his muscles sore; he has the rubbing wet sheet, the plunge, shower, or douche, and instantly his troubles vanish. Or he may have a lumbar abscess, which has run him down so low that when he wakes in the morning he finds he cannot walk. Two or three gallons of cold water are poured over him, upon which he walks readily. Now these effects of water, remarkable as they are, arise simply from its excitant or electrical power.

7. **By its Temperature.** — In acute disease, in all fevers and inflammations, of whatever name or grade, the great power of water to regulate the temperature of the body is one of the most striking of all the phenomena cognizable by man. By the use of cold water we can always vary the heat of the body and the velocity of the heart's action to any desirable extent.

8. **By Purifying the Blood.** — Water accomplishes one thing which no drug, no other substance in nature can. *It purifies the blood.* It does this because it penetrates every lane and alley of the system, however minute. No capillary is so delicate that it does not penetrate its smallest possible part. It purifies the blood, because as long as the vital principle lasts, the tendency of nature is to preserve the vital fluid in a healthy state; and penetrating every tissue of the body as water does, it assists nature in the purifying process as no other substance can.

9. **By Augmenting the Vital Force.** — No fact in science is better established than that water possesses the power of actually increasing the amount of vitality in the system. This is, in fact, the prime effect of water. It aids the system in throwing off disease in the same way that increasing a merchant's capital aids him in throwing off debt.

The foregoing propositions are submitted as elucidating some of the leading principles concerned in the action of water upon the living body. I do not claim, however, that the whole of the philosophy of the effects of water is yet understood by any one. Doubtless those who know most about it have yet much to learn.

Rules for Using Water.

The Time of Day. — In general, the more powerful applications should be made in the early part of the day. At this time the calorific powers and the circulation are more vigorous, and, consequently, the body more able to resist powerful applications of whatever kind.

The Meals. — Ordinarily, no powerful bath should be taken within three to four hours after a meal. A full stomach and cold water do not at all agree. But in certain diseased conditions, as feverishness, inflammation, colic, cramp in the stomach, cholera morbus, and other sudden attacks, water appliances are to be commenced without reference to hours or meals. The symptoms then are our only guide.

The Lighter Baths.— If there is doubt as to which application to make, the well-wrung rubbing wet sheet, the tepid shallow bath, or a warm bath should first be taken.

Reaction. — Within a reasonable time after a bath, the body in all its parts should become naturally warm. If the feet and hands remain cold, and the nails and lips blue, the bath has, to say the least, done no good. In some cases of fevers and other inflammatory diseases, it is better to keep the body chilly than to allow it to become too warm.

Ulceration. — If any part of the body, as the extremities, lungs, bowels, etc., is undergoing any considerable ulceration, very cold baths are inadmissible.

Nervousness. — With some persons who are highly nervous, and particularly with nervous females, much cold bathing, although it appears to agree well, and to be the best for a time, is in the end harmful, rendering the nervousness and general debility worse.

Exercise. — For the douche, plunge, cold sitz, and foot baths, and all others that abstract a large amount of caloric from the system, the body should be fully warm, and the circulation somewhat accelerated by exercise. Exercise should also be taken AFTER the bath, until the heat and circulation are fully restored. But if exercise is impracticable either before or after the bath, friction should be made to take its place.

Increased Heat. — Elevation of temperature constitutes no objection to bathing, provided the body is not excessively fatigued. The reason why overheated persons sometimes lose their lives by plunging into or drinking largely of cold water, is, that the vital force has been too much exhausted. Mere heat is an advantage.

Perspiration. — Neither does this constitute an objection to bathing or water-drinking, if the foregoing rules are observed.

The Air. — Bathing in the open air is always preferable to in-doors, provided the extremes of heat and cold are avoided.

The Head. — It is well always to wet the head with cold water, both before and after a bath. Douches and the shower should never be taken on this part. Simple pouring or affusion is the only mechanical force of water that should be allowed on the head.

Pregnancy. — This, as abundant experience proves, forms no objection to bathing, or any form of properly regulated water treat ment. Cold bathing and water-drinking are of the greatest service during this period.

The Season. — If the lungs are not extensively diseased, and if there is no considerable ulceration going on in any part of the system, the cool and cold seasons are preferable for a course of bathing. With right management, a patient gains two or three times as much in a given time during the cold months as he does in the hot.

Days of Rest. — One day in seven water-treatment should be discontinued, with the exception of a simple ablution in the morning. Six days' treatment in the week is worth more than seven, because it is a law of nature that, if a remedy is continued steadily and without change, it loses much of its good effect. This is as true of water as of any other agent. Those who do wisely will omit the treatment on Sunday, whatever their religious convictions may be.

Internal Use of Water. — The same general rules apply here as in the external applications. *Thirst* should for the most part be gratified whenever it is experienced. As a rule, the less water drank at meals the better. For the *tonic* effect, it is to be taken while the stomach is empty, and it is better that exercise should accompany it. From six to twelve tumblers per diem is a fair allowance for average patients.

Quality of Water. — For all remedial as well as hygienic purposes water should be as pure and soft as can be obtained. With proper care and ingenuity in the construction of cisterns, filters, etc., this desirable end can be everywhere accomplished. Lead, and lead pipes, should be avoided, except where the water runs freely and constantly.

The Sweating Process. — Formerly it was much in vogue to sweat patients in the blanket pack, but latterly the practice has quite gone into disrepute. For several years of the latter part of Priessnitz's career he was very averse to using the process. It was a remark of his, that the cures by sweating were not permanent.

Wet Bandages, Compresses, etc.

THESE, as we have already seen under the head of wounds and injuries, are of great value in water treatment. They are used of any desirable size, upon any part of the body, and produce different effects accordingly as they are used. *Cooling* wet compresses are such as are changed or rewet frequently, and for the most are left uncovered. The *warming* or *stimulating* are covered and left upon the part until it becomes as warm or warmer than natural. *Warm* fomentations are useful in certain cases, but the *hot* should, as a rule, be discarded.

The *wet girdle* is one of the most useful of all medical appliances. Two and a half or three yards of good toweling, with tapes arranged at one end, the corners of which have been turned over and sewed so as to form a point, forms a good girdle. It should pass usually three times about the body, one-half having been wet. This brings two thicknesses of wet on the abdomen and one upon the back. At Graefenberg, this application was worn by every patient, and, as a rule, all of the time. It is useful in a great variety of ailments, both acute and chronic. The same *form* of application is also useful for the arms, legs, etc., the tapes being used in preference to pins.

The *wet jacket*, or *chest wrapper*, is also a valuable resort in diseases of the chest. Oiled silk and other similar articles, as I have elsewhere observed, are not to be used upon these local applications.

The following is the substance of Dr. Shew's description of hydropathic appliances.

The Wet-Sheet Pack.

In this process a coarse linen or cotton sheet is used, long enough to reach from the patient's head to the soles of his feet, and about two yards in width. The bed is stripped of all its covering, one or two pillows only being left for the head. One or two comforters are then spread upon it, and over these the same number of woollen blankets, which are less injured by wet than cotton comfortables. The sheet having been pretty well wrung out of cold water,—always pure and soft, if such can be had,—is then spread out smoothly upon the blanket. The patient being undressed, lays himself upon the sheet, and, his arms being held up, an assistant laps one side of it over the body and lower limbs; when, the arms being dropped at the side, the other part of the sheet is, in like manner, lapped over. The blankets are then, one by one, brought over the person in the same way, and tucked under from head to foot. Comfortables may be added, if necessary.

It is always best to place a wet towel, covered with a dry one, on the patient's head while he is packed. If too much chill is not produced, the dry one may be left off.

This is the ordinary way of taking a pack in *chronic* disease.

The wet sheet is one of the most soothing and agreeable of all the water appliances. Hence it is that it is so often misused. It is so delightful, and tends so much to produce slumber, that the patient never feels ready to get out of it. But this slumber, — so profound and sweet as it often is, — he should remember, *may* be only an apoplectic stupor, which leaves him with a swimming head, attended with faintness, perhaps, and ending in a severe headache; giving him, in short, a congestion of the brain. All this happens in consequence of robbing the skin too long of the air it should breathe.

There has been a notion at some of the establishments that the wet sheet is to be used for sweating; and to this end, the patient has been literally stewed hour after hour, in some cases, even four, five, and six hours in succession, with the view of sweating him. All such practice is hurtful. If the patient gets better under it, it is in consequence of the good effects of water used in other ways, coupled with the ever-important adjuncts, air, exercise and diet. In later times, Priessnitz never sweat patients at all, much less in wet sheets. If a man must sweat, leave off the wet sheet assuredly, as that only hinders the operation. Use the blanket pack or the vapor bath.

How Long shall the Pack Continue? — Here, too, there has been, and still is, much error in hydropathic practice. "Stay in the pack till you get warm," has been the old doctrine. But some get warm at first, and afterward get cold; — so at least they feel. What is to be done?

One of Priessnitz's improvements was to give short packs. "Remain enveloped for fifteen or twenty minutes only," he said. "If you are not able to bear the pack in that way, take the rubbing wet sheet and the lighter processes until you are." In some cases he gave two or three of these short packs in succession, the patient rising between each to take an airing, a rubbing wet sheet, or other bath, and then returning to the pack.

Thus far the wet sheet has been spoken of as used in *chronic* diseases. In acute attacks it is managed differently, according to the case. If the object be to abstract caloric from the body, we cover the sheet but little, — with a single dry sheet, or a blanket or two, or, perhaps, with none of these.

We know that if we keep a wet towel about a keg of water on a hot day, the water will be made cooler by evaporation. In the same way, when a patient is hot and feverish, we keep one, or, still better, two wet sheets around him, without other covering, and thus bring down the heat and circulation to any desirable degree. We sprinkle water upon the sheets, or rewet them as often as is necessary, — in some extreme cases of fever continuing them a whole week or more. Experience teaches that the continuous application of the wet linen is, in such cases, a most serviceable application, and one that tends most powerfully to induce in the dermoid structure its natural and healthful state.

The Wet Sheet Acts by Absorption. — It draws morbific matter *out of the body*, as any one may see who applies the sheet for a short time, and then washes it. Observe, too, what an odor comes from the sheet when a diseased patient has been packed. At the same time, it absorbs the pure water into its finest tissues on a large scale, thus supplying that fluid which of all substances the system, under such circumstances, most needs. This moist warmth of the sheet also acts as a most soothing poultice.

The Wet Dress.

A MODIFICATION of the wet sheet, and in some respects an improvement, is the "wet dress," so called.

A coarse linen or cotton dress is made with large arms, so that one may take the application without help. The dress being wet and applied, the patient lays himself upon blankets, in which he wraps himself just sufficiently to become comfortable. Or, he may have dry flannel dresses to put on over the wet one, and then lie in a common bed. In this application, the air is not excluded from the surface to anything like the same extent as in the common tight pack. Hence a patient may remain in it a half, or the whole of the night, if he chooses, — being careful to become neither too warm nor too cold. Rewetting once or twice in the night will be of service. Often in a single night a bad cold may be thrown off in this simple way.

The Half Pack.

Many patients have so little reactive energy, that while they can bear a half pack, so called, the entire sheet would abstract so much caloric from the body as to injure them. In such cases, the sheet is to be applied so as to extend only from the arm-pit, or at most, from the neck to the hips, leaving the lower extremities, as it were, in the dry pack. Sometimes the sheet is allowed to extend to the ankles, not including the feet. Packing the trunk of the body in wet towels acts upon the same principle as the partial or half pack, and is, in many cases, a valuable preliminary measure. It is well to take these preparatory steps when a patient who has suffered long from chronic disease is beginning with the envelopment.

The Folded Wet Sheet.

In domestic practice, a modification of the wet sheet may be had by folding four-double a common coarse sheet, for enclosing the trunk from the armpits down. Two thicknesses of this are wet in cold water to come next the body.

This is a valuable application in a host of ailments, as pleurisy, inflammation of the lungs, inflammation of the bowels, colic, cholera, cholera morbus, rheumatism, painful menstruation, after-pains, etc. This remedy, which can be applied in five minutes, will often soothe a patient quietly to sleep, whose lot, without it, would be a night of agony. One advantage of this application is, that if a patient is too weak to rise, the sheet may be opened in front, so that fresh water may, when needed, be sprinkled upon it, and wet towels may be added under it upon the abdomen, if necessary.

In all the methods of applying the wet sheet, there can be no possible objection to using warm bricks, bottles, etc., for the feet when cold.

Bath after the Pack. — It is the practice generally to take some form of the bath after the pack. If the patient is too feeble to rise, an ablution is performed while he is in bed. In other cases, a wet-sheet rubbing, shallow, plunge, towel, or other bath, is resorted to, but not strictly of necessity. It is better however, as a rule, to make the process a compound one, that is to take some form of bath after the pack. This should also be followed by exercise in the open air, if it can possibly be taken. A pack, followed by a faithful turn at work, or by exercise in the open air, is always worth much more than when followed by rest within doors.

The Rubbing Wet Sheet.

THE rubbing wet sheet, too little appreciated, and too seldom used, is one of the most valuable of all the hydropathic resources. There is probably no other single application of water, in all the multiform modes of hydropathic medication, that can be made, on the whole, as useful as this. It is a tonic, a stimulant, a sedative, an antispasmodic, a derivative, or a febrifuge, according to the circumstances under which it is applied.

We take a coarse linen sheet, — although cotton answers a very good purpose, — large enough to throw around the body like an Indian's blanket. It is wrung more or less, according to the demands of the case. Thereupon, it is thrown quickly around the patient's body, who, if strong enough, is in the standing posture; and then both patient and assistant set vigorously to work, rubbing *over* the sheet, not *with* it, as some do, three, four, or more minutes, until the surface becomes thoroughly warm (Fig. 188).

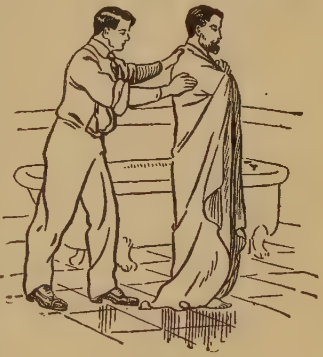


FIG. 188.

If there is fever, less friction is required. After the *wet* sheet, comes a *dry* one, to be used in the same manner. Those who have sufficient reactive energy,—and most have, — may dry the body simply by fanning it with the dry sheet, the windows at the same time being open. This sort of air-bath exerts a highly pleasurable effect upon the skin. Instead of giving one a cold, it helps greatly to ward it off. This method of drying the body was one of Priessnitz's later improvements.

The rubbing wet sheet, it should be remembered, is not a *single* application, capable of producing only one effect. It is used in *three* different gradations, and to produce very different results. It is well wrung, or only moderately wrung, or left quite wet and dripping. If a person is fatigued, or has a low degree of reactive energy, the first form is the one to adopt; if there is not much fatigue, and good reactive energy, the second; and if the patient is feverish, and the object is to abstract heat simply, we use the sheet quite wet and dripping; and we repeat it as many times in succession as the case may need. One great advantage is, that we give it before or after a wet pack, when no bath is at hand; we also give it in connection with any other bath we may choose.

See how admirable a remedy the rubbing wet sheet is, when properly understood! A patient, — a child, perhaps, — is so feeble in the reactive power, that almost any form of bath we can give it sends the blood from the surface, making the lips and nails pale or blue, and the extremities cold, showing congestion of the internal organs. When a bath produces such effects, it is very apt, to say the least, to do more harm than good. But we can apply the rubbing wet sheet in such a way as to cause none of these ill effects; besides, it may be repeated many times in the day, so as to give the patient the advantage of a strong treatment; for a *light* treatment, which can be easily borne, is made a *strong* one by the frequency of its repetition.

A wet sheet, well wrung, holds perhaps a pint of water; or, at most, a quart. Now, it must appear plain, that a pint or quart of cold water, spread over so large a surface as the whole skin, must become very easily warmed by the body's heat. Besides, if there is *great* delicacy of constitution, we may wring the sheet out of water at seventy, eighty, or even ninety degrees, gradually lowering it as the patient can bear it.

The *domestic availability* of this application is also to be spoken of. In every dwelling, however humble, there is the coarse sheet, and the bucket of water. How useful, therefore, as a resort, in home practice!

The rubbing wet sheet appears a trifling application, — one which is not capable of producing any great result. But when we remember the myriads of nerves of animal life, spread over the skin, and derived from the brain and spinal cord, it need not surprise us that its application should so invigorate the body, take off bodily and mental depression, remove languor and fatigue, expel flatus from the bowels, remove thirst, give appetite, and cause a feeling of calmness and relief which can be appreciated only by those who experience it. A minister, for example, preaches three times on a Sunday, and gets his brain so excited that he cannot sleep. A cold bath would be too powerful, and opiates would only act as stimulants, making the matter worse. Two or three successful applications of the rubbing wet sheet, with powerful friction, bring the blood so much to the surface, that his brain becomes relieved, and he very soon falls into a sound and refreshing sleep. So, too, when a man has been long wet and drenched on a rainy day, and comes home, with the surface and extremities cold, and the blood pressing hard upon the brain and other internal organs, — the well-wrung rubbing sheet is applied, with plentiful friction, and at once the oppressed organs are set free.

In using the rubbing wet sheet, as in all other forms of general bath, it is well to wash the hands and face in cold water, both before and after it. There is no need of throwing it over the head, as some have thought it necessary to do. A patient needs to breathe freely when he takes a bath.

This application is not always the most pleasant one. It does, in fact, require a good degree of moral courage to enable one to endure the first shock. The sensations produced by it are worse, if possible, than those from a plunge into cold water; I mean the first touch of the sheet to the body. Nervous ladies sometimes tell us they cannot take the rubbing wet sheet, when, at the same time, they take the cold plunge, which is far more powerful, and perhaps too powerful for their case. This unpleasant feeling does no harm, for it vanishes in a moment or two after the sheet touches the body.

The Douche Bath.

THIS is the most powerful, but not the most useful of all the hydropathic appliances. A common douche consists of a stream of water from one to two inches in diameter, with a fall of five to ten feet. But douches may be arranged of any desirable size and height. (Fig. 189.)

This remedy is useful in paralysis, stiff joints, gout, rheumatism, tumors, and old swellings of various kinds. Those who have weak lungs, stomach, or other abdominal organs, should not resort to the douche without the best of medical advice.

The Shower Bath.

THIS is also one of the more powerful of the hydropathic appliances, and needs judgment in its use. It consists in fact, of a vast number of small streams or douches, and hence is a powerful refrigerant, as well as excitant, to the system. It is useful to commence this bath, for a time at first, only upon the limbs. It is used by all gymnasts.

The Cataract Bath.

THIS also is one of the more powerful of the hydropathic processes, and is to be classed with the two preceding baths. Like them it may be said to be stimulant, tonic, and alterative, while it is also highly sedative as far as animal heat is concerned.

The Hose Bath.

THROUGH the modern improvements in India-rubber, gutta-percha, leather, etc., it is easy, whenever there is a small fall or head of water, to arrange what is called a hose-bath. It is in principle a douche, with the additional advantage that it can be made to act upon any part of the body, and from whatever direction we choose. Rightly applied, the hose bath is a valuable remedy. (Fig. 190.)

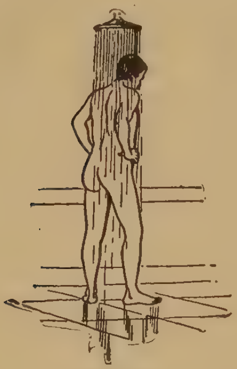


FIG. 189.

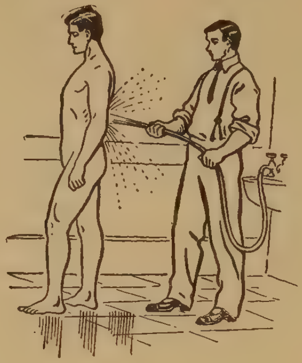


FIG. 190.

The Pail Douche.

THE process which passes under this name is taken thus: The patient seats himself in an empty, shallow, or other bathing-tub, and crosses his hands over his chest. As many pails of water as are ordered are then dashed over him suddenly, one after another, before and behind alternately, — not poured, but thrown with some force, by first a backward and then a forward motion of the pail.

A better method of using it is, for the patient to stand in an empty bathing-tub, while an assistant takes two pails of water, one ten degrees warmer than the other, and empties the warmer half upon the chest and half upon the back, and then bestows the colder pailful in the same manner; and then dries with friction.

The Wave or Sluice Bath.

THIS is taken at the sluice-way of an undershot mill-wheel, or in any similar place. The patient takes hold of a rope, or something by which he can maintain his position, and then, lying down, subjects his body to the action of the water. This is, on the whole, a pleasant and agreeable bath, and in its effects somewhat resembles the douche, being, however, milder and safer.

The Half Bath.

THIS bath may be used as one of the mildest of the water-cure processes, or as one of the most powerful. An ordinary bathing-tub is a very good apparatus for the purpose. A good-sized washing-tub will answer very well, if there is nothing else at hand. The water should generally be quite shallow in this bath, — from three to six inches. Priessnitz's half-baths were made of wood, four or five feet long, about two and a half feet wide, and twenty inches deep. This simple contrivance is one of his most powerful remedial means,—that by which some of his highest triumphs are achieved.

The water is generally used of moderate temperature, at sixty to seventy degrees Fahr., and, when long continued, is changed, as it becomes warm from the heat of the body.

This bath may be used,

First, as a means of cooling the mass of the circulation in the hot stages of fever, and in inflammatory attacks of every kind.

Secondly, as a revulsive, or means of drawing blood in congestions or inflammations of the nobler organs, the brain, lungs, stomach, liver, etc.

Thirdly, as a means of resuscitation in the shock of serious accidents, sun-stroke, and before, during, or after apoplectic and other fits. In drunkenness and delirium tremens, the half bath is a sovereign remedy.

Fourthly, as a middle means, and preparatory to the general bath in weak constitutions.

In the latter of these indications, the bath is generally used but for a few minutes after the wet sheet, or at other times, as may be desired. In the former, much practical knowledge is necessary in order to proceed always with safety, and to obtain the best results. Thus, six, or even nine hours may be required, with the greatest perseverance, the patient being thoroughly rubbed over the whole surface, and this to be kept up constantly by relays of assistants, the patient's head and shoulders, meanwhile, being supported.

The Plunge Bath.

In sea, river, and lake, as well as by artificial means, and as a matter of luxury, religious observance, purification, and the prevention and cure of disease, the plunge bath has, in all periods of time, and in all parts of the world, been a favorite resort. So efficacious, indeed, has this simple means proved in healing the sick, that not a little superstition has been mingled with it. Springs and wells have often been supposed to possess some mysterious power, and for that reason has been named after some patron saint. In this respect, the world has loved mystery and marvellousness rather than the pure and simple truth.

In hydropathic practice, the plunge is much used; but many patients are not able to bear it. Those who are not sufficiently strong for it at first, should practise the rubbing wet sheet, the half-bath, drinking, exercise, etc., until the plunge can be borne. It is a favorite remedy at all the establishments, to be taken directly on coming from the wet-sheet pack.

The Head Bath.

From time immemorial, cooling applications to the head have been much depended upon in that violent and dangerous disease, inflammation of the brain. All other known means failing, certain obstinate affections of the head have been known to give way to affusion of cold water upon the part. In headache, drunkenness, delirium tremens, the delirium of fever, epilepsy, rheumatism of the head, diseases of the eye, earache, deafness, loss of smell and taste, and in nose-bleed, this highly energetic remedy is brought to bear. In taking it, the patient lies down, placing the back of his head in a shallow dish, filled only an inch or two with water. (Fig. 191.)

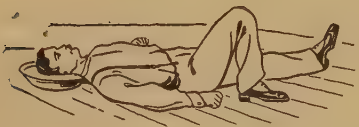


Fig. 192.

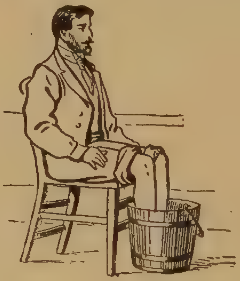


Fig. 192.

The Leg Bath.

This is useful in cases of ulcers, swellings, eruptions, gout, rheumatism, sprains, wounds, etc., of the leg or thigh. The relief and strength obtained, often by a single application of this remedy, is truly wonderful. A variety of apparatus may be contrived for administering the leg bath. A common wooden tub, contrived for the purpose, like that represented in Fig. 192, answers a good purpose. In such a vessel, he covers the inflamed limb introduced, and cools the blood flowing to it.

The Sitz-Bath.

Convenient tubs, wooden or metallic, are constructed for this bath, but an ordinary wash-tub answers very well. The vessel should be large enough to permit the motion of the arms in rubbing the abdomen, sides, and hips, first with one hand, and then with the other. Water enough should generally be used to pretty nearly cover the belly. The more movement and friction while in this bath the better. It is more conveniently administered when the tub is elevated two or three inches from the floor. Some undress the patient completely, and place a blanket or sheet over the upper part of the body; but oftener only those parts are uncovered which are to be exposed to the water. (Fig. 193.)

In a variety of ailments, this bath is highly valuable. It may be made one of the most powerful of all the hydropathic modes. Like all other powerful applications, it should be taken only when digestion is nearly or quite completed.

As a tonic to the stomach, liver, bowels, womb, spine, etc., this bath is highly useful. In constipation and other irregularities it is famous. Those of sedentary habits will find its use of rare service. For the tonic effect, ten, twenty, twenty-five, or thirty minutes. If continued for some length of time the water is to be changed once or more, as it would otherwise become too warm.

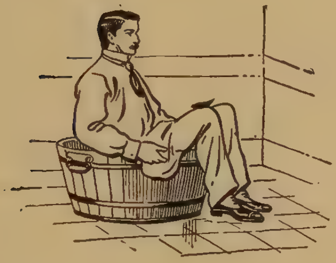


FIG. 193.

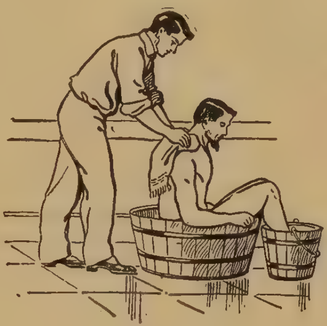


FIG. 194.

The Wash-Tub Bath.

UNDER a great variety of circumstances, the wash-tub bath is an invaluable remedy. For example, a patient is feverish; by setting him in a wash-tub half filled with water, and at the same time, if we choose, putting his feet in a pail of water, cold or warm, according to the case, we may give him any desirable amount of cooling. We cannot, indeed, too highly prize this simple contrivance for using water, — a means which every family possesses. (Fig. 194.)

The water, as a general rule, should be tepid, ranging from 72° to 90°, and may be prolonged from two to fifteen minutes, according to the strength of the patient. It should never be carried to the extent of producing blueness of the nails. The patient should be dried with towels, or the dry rubbing sheet.

This bath is useful in the treatment of eruptive fevers, bilious remittents, the hot stage of intermittents, and in hectic and typhoid fevers. It is often used after the wet sheet pack, in chronic affections, and may then have a little cooler temperature, or else be followed by pouring a pail of cooler water over the shoulders to tone up the skin.

The Affusion.

The patient stands in a wash-tub, bathing-tub, or other convenient place, when, by means of a pail, pitcher, or basin, the assistant pours water upon the head, neck, etc., either upon the whole of the body or only upon a part. The water is used in quantity and temperature according to the necessities of the case. The affusion is one of the best of hydropathic modes.

Fifty years ago Dr. Currie, of England, performed great cures in fever by the affusion, sometimes tepid, at others cold, according to the strength and heat of the patient. If there was great heat, the water was used cold; if not, the reverse. In a variety of febrile diseases, such as typhus fever, scarlet fever, small-pox, measles, tetanus, convulsions, etc., he used this remedy with remarkable success.

Towel and Sponge Bath.

With one or two coarse towels and a quart or two of water we may take a very good bath almost anywhere, even in a carpeted room, at a hotel, or wherever we may be, without spilling a drop of the water. After a person becomes accustomed to this form of ablution, none but the most indolent will be willing to do without it, unless they can have some other form of bath. A daily towel ablution, thoroughly performed, is an excellent prevention against colds, helps the appetite and digestion, and is a good means of preventing constipation.

Some are in the habit of sitting in a half-bath or a sitz-tub, and with a large sponge making the water pass freely upon the head, neck, shoulders, and other parts of the body. At the same time the bather may pour water from a cup, basin or pitcher, upon the head, neck, etc. This is a mild affusion, and stronger in effect than the towel-bath.

Wash-Down.

The process to which this name is given by Dr. Edward Johnson is practised as follows: "The patient stands in an empty sitting- or wash-tub, beside which stands a pail of cold water with two coarse towels soaking in it. The bath attendant, taking his place behind the patient, lifts one of the towels all loaded with water, and lays it quickly on the patient's head. The patient immediately seizes it, removes it from his head, and rubs himself rapidly with it,—his face, his throat, shoulders, arms, chest, stomach, bowels, thighs and legs. having gone rapidly over the whole body once, he drops his towel into the pail again, which the bath-man presses down to the bottom of the water, then lifts it out, and places it on his head again. As before, the patient seizes it, and goes all over the same ground once more, and then drops it into the water again, when the bath-man again lifts it and places it on the head to be a third time removed by the patient, and applied as before, rapidly, actively and energetically, all over his body in front. The bath-man is industriously occupied all the time behind in the same manner, from the back of the neck to the back of the legs, wetting his own towel as often as he wets that used by the patient, viz., three times. This is called a wash-down of three towels. The patient is then dried in a dry sheet. It is a more powerful bath than the common towel-bath, but not in all respects so convenient to take.

The Cold Foot-Bath.

One of the first things people who are troubled with cold feet do is to plunge them into cold water. Nor is the assertion, put forth in some of the hydropathic works, that the cold foot-bath was prescribed by Priessnitz for the same purpose that the faculty order warm ones, correct. When the feet are already cold, neither Priessnitz nor any one in his sober reason would prescribe cold water, which can only make the parts colder. To obtain the good effect of the cold foot-bath, so far as the feet are concerned, they should be warm whenever it is taken. For a tendency to coldness of the feet, — a very common symptom in these days of so-called luxury and refinement, and one that indicates a state of things in the system incomparably more to be dreaded than the mere coldness of the feet, — this is *the* remedy. It may be taken at any convenient time; just before the morning walk is a very suitable occasion, the parts being usually warm early in the day.

At other times, if cold, they should, if at all practicable, be warmed by exercise and friction before subjecting them to the action of cold water. But in cases of old age, great debility, etc., the warm foot-bath and other warm applications may be resorted to before the cold. Thus with cold, exercise and friction, accustoming the feet daily and frequently to cold water, will beget in them a habit of remaining warm. In a great variety of ailments, such as toothache, rush of blood to the head, headache, earache, inflammation of the eyes, gout, rheumatism, hemorrhage, etc., the cold foot-bath is a valuable remedy. It is ordered deep or shallow, and of duration according to the nature of the case.

Wading Foot-Baths.

I have often directed patients to wade in water in some convenient place as a means of hardening the system and of giving tone to the nerves. Delicate ladies who were not able, as they supposed, to endure cold water applied to the feet, have by degrees, wetting the feet but little at first, become so accustomed to the coldest water that in a few weeks they could bear as much as any one would desire. Caution and perseverance should be the rule.

It is partly by sympathy and partly by the abstraction of heat, that foot-baths and wetting the feet act in so beneficial or deleterious a manner as we know them to do. The principle of sympathy is an old one in the medical art, but none the worse for that.

The Warm Foot-Bath.

I AM aware that some who consider themselves *genuinely hydropathic* object to the use of this remedy. Having truth for my object, however, I care not for such objections so far as I myself am concerned, and without stopping here to argue the question, I simply remark that *warmth* under some circumstances is as natural an application for the living body as *cold* under other circumstances. I have already remarked, under the head of the cold foot-bath, that putting the feet into warm water is often a good preparatory process to that bath. It is good also, now and then, for soothing divers aches and pains, and also for warming the feet of old and weakly people, who cannot exercise sufficiently. Soaking the feet in hot water for twenty minutes, and taking five or six drops of spirits of Camphor in a teaspoonful of sugar will often break up a cold, if taken in season.

The Nose-Bath.

IN a variety of nasal ailments, catarrh, colds in the head, inflammation and ulceration of the nasal passages, nose-bleed, etc., the *nose-bath* is a salutary remedy. The water is used either tepid or cold, according to the case. It should be drawn back, if possible, so that it is ejected by the mouth. Those who have injured the nasal cavities by much snuff-taking will find advantage from sniffing water freely into the nostrils. If one is determined to leave off snuff, as every one addicted to it, if he regards either health or bodily comfort, ought, he will find it useful often to take cold water instead of the abominable weed.

The Eye and Ear Bath.

VARIOUS contrivances may be brought to bear in applying water to the eye and ear. Light, ascending douches and showers are useful for various diseases of the parts. There should not be much force used in this way. Immersing them also in water is often useful. The water should not, in general, be very cold, tepid or warm being often the best.

Mouth, or Oral Bath.

For inflammation of the gums, mouth, throat, and palate, in slimy secretions from the throat and stomach, in toothache, catarrh, colds, and chronic hoarseness, garglings and baths for the mouth are of great service. Pauley, a merchant of Vienna, has been thought singular for his zeal in recommending this bath. Clergymen and others who suffer hoarseness by much speaking will find that holding very cold water in the mouth until it begins to grow warm, and then ejecting it, and by frequently repeating the process, much benefit will be obtained. Coughs and tightness of the chest may often be essentially relieved by this bath. In mucous secretions from the throat and stomach, by ejecting the water a number of times, it will surprise those who have not witnessed the remedy to see the amount of slimy secretion thrown off.

Fletcherism.

Horace Fletcher, the originator of the improvements in nutrition now dignified by the above title, was led to promulgate his doctrine through his own personal experience. In his own work on this subject, from which most of the following abstract has been taken, he states that owing to an unexpected disbarment from insurance, although having lived and been trained as an athlete and passed an agreeable and active life, he took up the study to save himself. In his work he answers *yes* to the following vital questions: **Do we eat too much? Can we learn to eat without loss of enjoyment, without fear of food being a nuisance, with assurance of health, with increase of energy, with increase of strength?** After undergoing his cure which he claims cured him of two sicknesses which rendered him uneligible for life insurance, he reduced his weight from over two hundred pounds to one hundred and sixty-five and was then accepted for insurance and assured to be a healthy subject for his age. It is, of course, a fundamental principle that it is not by what we eat that we are enabled to live but what we digest. As an example of rapid mastication and inefficient digestion he cites griddle cakes which hurt so many people. He claims that the syrup being cane sugar and undigestible, not being properly masticated or mixed with saliva enters the stomach and increases the acidity, thereby causing indigestion. He claims that the cakes having been properly masticated and mixed with the saliva the cane sugar would become grape sugar and then could be properly digested. The principle of his discovery, if we may call it that, for at least attention had not properly been paid to the proper mastication of food before Fletcher promulgated his doctrine, depends upon the condition to which the food is reduced in the mouth by mastication and mixed with the saliva before it is swallowed. All of the organs of the body employed in the functions which require their use will work to their limit if called upon as nature intended, but should their good offices be neglected they are liable to undergo a change which we know as atrophy, and are then not liable to do efficient work. The first object of mastication is to break up the food so as to make it more easy to swallow it, and still more important, according to Dr. Campbell, of London, to increase the proportionate admixture of saliva and other digestive juices as the food goes through the tract from the mouth to the bowels. When properly used the flow of these juices is increased and by the saliva being increased, which is an alkaline medium, the action in the stomach is increased. Although the softer foods such as puddings and wet foods may be swallowed easily, the drier foods unless moistened with water or better with saliva are almost impossible to swallow. This difference of foods is observable in the animals, the so-called *carnivorous* hardly taking the time to masticate the foods while the *herbivorous* such as cows and sheep have to thoroughly masticate their food, chewing it over and over and later on bringing the food back to their mouth to chew over again, called ruminating. As we are examples of both, we should thoroughly masticate all kinds of food and mix it intimately with all the juices at our command to prepare the way for its absorption later on in the stomach and intestines. Too many of us expect the stomach and intestines to perform work that the teeth should do for us, and should we swallow food in particles or pieces larger than the stomach can take care of, indigestion is bound to follow. One of the principal causes of the lack of proper mastication is the kind of food that is served to us to-day. In the home to save time, instead of sitting down and making the eating of food a pleasure and comfort, we hurry through it as we do all our other necessary actions to the great detriment of the organs which nature has supplied us to work with. This results in defective apparatus throughout the tract: the salivary glands not being called upon to furnish a sufficient amount of secretion lose their interest in the matter, the teeth become decayed and irregular so that the biting and chewing of the food does not take place in the proper manner, then the nervous system becomes disorganized resulting in inefficient propulsion of the food in the stomach and intestines, and masses of undigestible foods accumulate and cause constipation and other troubles lower down in the intestines.

DIET AND DOMESTIC MANAGEMENT OF THE SICK-ROOM

By a careful and detailed study of which, an intelligent person
can discharge the full duties of an
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DIET AND DOMESTIC MANAGEMENT OF THE SICK ROOM.

Choice of the Sick-Room, etc.

Sleeping Apartment.—In every case of disease, however slight its nature, the sleeping apartment of the sick should be airy and well ventilated; but, when Providence visits any member of a family with disease of a serious and protracted description, all other considerations giving way to the necessity of the case, an apartment should be chosen and arranged in a special manner for the reception of the invalid. It should be one calculated to administer to his temporary comfort, as well as to aid his recovery. It is not time, when the alarm is sounded and the danger is already urgent, to think of such arrangements; forethought must be put in requisition; every want anticipated; and whatever is likely to be required should not only be provided, but so arranged that it can be instantly found when it is needed.

The sick-room should be large, lofty, and, if possible, with a northern aspect, in order to avoid the heat of the mid-day, or the afternoon sun; the windows should be capable of being opened by drawing down the uppermost sash. If possible, choose a room with an open fireplace or a ventilator opening into the chimney in the upper part of the room. No article of unnecessary furniture should be permitted to remain in the room; and that which is left in it should be of a description fitted to administer to the convenience of the invalid.

Two tables are sufficient. One of them may be small, to stand near the bed, for the immediate use of the patient: namely, to hold his jug of barley-water, or toast-water, or other beverage;—a small tea-pot, or what is preferable, a half-covered cup with a spout, to enable fluids to be administered without raising the sufferer in bed;—his medicines for the day;—and any other thing which he may frequently require.

The other table should be large, for the accommodation of medicines not in immediate use, and also for spare glasses, jugs, cups, spoons, both large and small, and other necessary articles. This table should have one drawer, at least, which ought to be furnished with the following articles: broad and narrow tape; two or three half-worn ribbons; a bundle of old, soft linen; a sponge; a few ounces of lint; scissors, large and small; a bone spatula for spreading ointment; a couple of rolls of muslin, and the same quantity of flannel bandage two inches broad; a pin-cushion well supplied with pins; needles and thread; and about half a yard of simple adhesive plaster.

A Sofa or Reclining Chair. — A sofa, if the apartment be sufficiently large to admit of it, is a very important piece of furniture in the sick-room; the erect or the sitting posture being injurious in many diseases; and, when the sick-bed requires to be made, a sofa affords the means of removing the patient from the bed with as little inconvenience to him as possible.

If there is not a space for a sofa, there should be an invalid or reclining chair; and, when circumstances will permit, it should be of that kind which is susceptible of a variety of changes, so as to vary, at pleasure, the position of the patient. There should not be more than two other chairs in the room. If there is a looking-glass in the apartment, in a situation which admits of the patient seeing himself in it as he lies in bed, its place should be changed, or it should be altogether removed from the room. A chest of drawers is essential; but none of the drawers should be appropriated for the reception of dirty linen, which ought never to be allowed to remain a moment in the sick-room. One drawer should be especially allotted for towels, of which an ample supply is, in every case, necessary. The washing-stand will require two additional basins; an additional water-bottle and a tumbler; and a large water-pitcher, under the table, always full of water.

No Cooking in Sick-room. — There should be no kettle, nor any implement of cooking, in the sick-room; even in winter, and when a fire is required. In general, a fire in the sick-room is only necessary for the comfort of the attendants. The lamp termed a *Night-nurse*, consisting of a water-bath placed over a lamp in a wire-worked cylinder; a small tin kettle which enters the top of the cylinder; and a covered earthenware vessel which fits into the water-bath, are useful for keeping fluids warm, and at the same time for preserving a light in the room, when an unshaded lamp or a candle would be hurtful.

In continued fevers, the sense of hearing is often so morbidly acute that ordinary sounds become causes of pain. In this case, if the floor of the sick-room be not wholly carpeted, every precaution to lessen the intensity of the sound should be taken. One of the most effectual is to have a couple or more pairs of large list shoes outside the door, into which the feet, even of the doctors, may be advantageously thrust, when their shoes make a creaking noise, or when a visitor or nurse treads with a heavy foot. On the same account when more than one nurse or attendant is required to be in the room at the same time, no conversation, although it may be carried on in a whisper, should be permitted. Whispering, indeed, is apt to excite delirium, and to augment it when it is already present.

Beds and Bedding.—Beds without curtains are those best adapted for the sick-room. In every case of disease, indeed, especially when it is attended by fever, the patient should be kept cool, and the most perfect freedom be given to the breathing; the hair mattress should be used, never a feather bed, and the pillows be firm and elastic. The coverlets, which are spread upon beds during the day, and often retained at night, are heavy, and calculated rather to increase than to subdue fever; consequently they should be wholly discarded from the sick-bed. Indeed, when the disease is fever, and when it is accompanied with great restlessness, owing to the evening exacerbation, if the bedroom be sufficiently large, two beds should be placed in it; or if two adjoining bedchambers can be obtained, a bed ought to be put in each, so that the patient can be moved from one bed to the other every morning and evening. This both aids sleep, and it also tends greatly to insure the personal cleanliness of the patient. The bedclothes of the bed from which the patient is moved, should, on his removal, be immediately turned down and fully exposed to the air; a precaution which will set aside the necessity of so frequent a change of linen as would be otherwise required. When there is only one bed, and when the disease is fever (unless the patient is too ill to permit his being moved), the sheets which have been used at night should be replaced by others in the morning, and hung up in the free air during the day, to be again used at night. But, when it can conveniently be done, in every case of continued fever, especially of an infectious kind, the sheets should be changed once in twenty-four hours; a practice which is likely to prevent the fumes of infection from being communicated to the blankets, or to any of the furniture of the room.

Ventilation is always of primary importance; and that period, happily, is gone by, in which air was carefully excluded from the chambers of the sick, even when they were suffering under febrile disease.

Ventilation is particularly demanded in those fevers in which miliary eruptions display themselves; under no circumstances is it so essential as in febrile diseases of an *infectious* kind. It may, however, be consolatory to those whose duty it is to attend such cases, to know that infection communicated through the air rarely extends above a few feet from the body of the patient; and even in the most malignant diseases, with the exception of confluent small-pox, and malignant scarlet fever of the worst kind, its influence does not exceed a few yards, if the room be well ventilated. On the contrary, if ventilation be neglected, the power of infection becomes greatly augmented from its concentration in confined and quiescent air; it even settles upon the clothes of the attendants, and on the furniture of the room; and these imbibe it most readily when their texture is wool, fur, or cotton, or any loose or downy substance capable of receiving and readily retaining the air. Smooth and polished surfaces do not easily receive or retain infectious matter; consequently the nurses and attendants, in cases of infectious diseases, should have glazed gowns, and aprons of oiled silk.

In no infectious diseases are these rules more essentially necessary than in small-pox and scarlet fever. It is well known that, if the bedclothes of a patient laboring under either scarlet fever or small-pox be closely folded up, they will retain the infectious matter, and communicate the disease at a great distance of time; but the influence of free ventilation is so great, that medical practitioners who are attending small-pox patients, and who go from them into the open air, do not spread the disease. Indeed, all infection is weakened by dilution with air. The danger of infection is augmented, if, along with bad ventilation, the atmosphere of the room be moist from any cause.

It is further consolatory to know that the infectious matter, even of the most virulent description, is not poisonous to everyone who is placed within the sphere of its influence. A predisposition of the body to receive the infection must exist before it can be communicated; a condition which is augmented by fatigue and watching, defective nourishment, mental depression, or anything which can lower the vital powers. The necessity, therefore, of maintaining these powers by attention to rest, a sufficient quantity of good and generous diet, and cheerfulness of mind, need not be insisted upon.

In every case of infectious disease, the attendants, even in the best ventilated rooms, should stand on the windward, or on that side of the sick-bed from which the current of air comes; as, by neglect of this rule, and by standing in the current which has passed over the patient, the infectious exhalations are blown upon them in a direct stream from the body of the patient. The attendants should never lean over the sick, nor should they receive their breath. The health also of the nurses should always be supported by nutritious and generous diet; but not by brandy, nor any other ardent spirit.

The term *infection*, in its most extensive signification, implies some deleterious matter, originating from any source, and transmitted through the air, which is capable of causing diseases in the human body. When this matter is emanated from the diseased bodies of men, the term is frequently regarded as synonymous with *contagion;* but, in strictness of language, the latter refers only to the communication of disease by *contact.* Whatever may be the matter of infection, it may enter the body through the medium of the lungs, which is the most ready inlet, or by the saliva, or even through the surface, if the skin be abraded, or if any ulceration be present. The influence of infectious matter is evidently exerted on the nervous system, displaying itself by debility, inertness, dislike to motion, great susceptibility of cold, irritability and despondency of mind, and by the production of a disease similar to that of the person from whom the infectious matter has proceeded. The infection may be supposed to have taken effect, and to have produced the actual disease, when the person who has been exposed to its influence is attacked with giddiness, pain in the head, irregular heat and chills, nausea, and, if the infectious disease be small-pox, convulsions. These symptoms are sufficient to denote the necessity for immediate medical advice.

Temperature. — Next to ventilation nothing is of more importance than the regulation of the *temperature* of the sick-room, avoiding both extremes of elevation or of depression; but much depends on the nature of the disease.

The best general temperature of a sick-room is 60° (Fahr.); and it is preferable to regulate this rather by the thermometer than by the sensations of the patients or the attendants. Under some circumstances, however, the feelings of the patient, and his susceptibility of impressions upon the skin, should not be overlooked. Thus if the temperature be a little above that of summer, and the patient, nevertheless, feel chilly, it should be raised five or six degrees. This chilliness is very apt to be felt in a dyspeptic state of the habit, and more especially when it is accompanied with hypochondriasis. It differs from that more severe but transient coldness which accompanies intermittent fevers, and some other periodical affections; and it requires an elevated temperature of the air for its removal, whilst the cold stage of intermittent diseases is best relieved by the warm bath, either general or local.

So important is the regulation of temperature, especially in fevers, that it often does more good than any other remedial measure. I have seen patients laboring under high delirium in a close, ill-ventilated room become rapidly quite collected by merely lowering the heat of the apartment twelve or fifteen degrees.

In convalescence, as the air of the sick-chamber should be frequently renewed, the temperature in spring and autumn ought to be maintained as near as possible at 55° to 60° (Fahr.); and it should be very gradually lowered as the invalid acquires strength, so as to enable him to bear with impunity the varying temperature of these seasons in the open air. Even then, if the previous disease has been pulmonary, the air admitted to the lungs should be tempered by the use of the Respirator, or a muslin handkerchief tied around the mouth. When the invalid first ventures out of doors, nothing, indeed, is so essential, in a prophylactic point of view, as avoiding extremes and sudden transitions of temperature.

Cleanliness. — Although *cleanliness* in the sick-room is essential, yet it may be carried so far as to become an annoyance to the invalid, and consequently to prove injurious. It is not requisite to sweep the room daily, nor to dust and arrange the furniture every morning, provided order be preserved in the room, and nothing but what is immediately necessary for the comfort and convenience of the invalid be permitted to remain in it. It is truly distressing to observe the confusion which prevails in some sick-rooms; everything being out of place, and to be searched for when it is wanted.

The period chosen for cleaning and arranging the sick-room should be the morning, as after a night's rest the patient is more able to bear the little noise and bustle which it always more or less occasions. The carpet should be sprinkled with moist tea-leaves, or newspaper torn in small pieces and wet, and lightly swept.

It is scarcely requisite to insist on the necessity of the utmost attention to the cleanliness of everything in the sick-room. The moment after any vessel or implement is used by the invalid, it should be removed from the apartment, and returned as soon as it is cleaned. Nothing in the form of a slop-basin or slop-pail is admissible; they only administer to the laziness of nurses.

The necessity of cleanliness in the vessels used for the food of invalids is strikingly illustrated in the bad effects arising from the neglect of it when an infant is brought up by hand. In such a case, if the feeding-bottle which is employed be not instantly cleansed after the meal has been given, the small portion of the pap or food which remains in the vessel becomes sour, and taints the whole of the fresh food mixed with it, causing colic and convulsions in the infant. The same risk of injury occurs in the sick-room, if the vessels used for administering food to the invalid be not instantly and well cleansed after every time they are used.

It is too common, also, to use one glass or cup for administering medicines, and to leave it unrinsed from time to time, — a custom which may prove as deleterious as a defect of cleanliness in vessels employed for food. Some medicines, when they are exposed to the air, rapidly undergo changes which alter their properties; and this alteration having been undergone by the small portion which is always left in the glass or cup, communicates the disposition to be decomposed to that which may be next poured into the cup. An active medicine may be thus rendered inert; or one which is mild in its operation may be so changed as to operate with hazardous energy. The same precaution, as to cleanliness, is also requisite as to the minim measure, when medicines are directed to be administered in a form which requires its employment.

Darkening the Sick-room. — It is a common error to imagine that a sick-room should always be either *partially or wholly darkened.* In some diseases, as, for example, fevers, when the eyes are acutely sensible to light, so that they remain half-closed, and the eyebrows are contracted, the greatest relief is experienced from darkening the room. When delirium is present, a certain degree of darkening is in some instances serviceable; whilst in others, especially when the delirium is accompanied with visual illusions, nothing so readily dispels these, and consequently abates the delirium, as the admission of the full daylight into the sick-room. There is much difficulty, however, in determining which state of the apartment is likely to be most serviceable in any particular case. Observation of the effects of light and darkness, in the individual case, must be our guide.

These illusions of the sight are generally the result of former impressions, renewed at a moment when the brain is in such a disturbed condition as to set aside the exercise of judgment. In this condition of the brain, the renewed conceptions are not readily corrected, as in health, by impressions received from the external world; hence, they become more vivid in the mind of the invalid when the sick-room is darkened, and all visible objects are shut out. They are usually dispelled by new impressions on the organ of sense chiefly implicated; on which account, those which are connected with sight seldom occur during the day, when real objects are presented to the eye, unless the brain be so over-excited as to bring the conceptive faculty into intense exercise, sufficient to awaken those false perceptions which create a belief of the presence of individuals not only not present, but who have been long dead. This state of the mental organ is similar to that on which depend the spectral illusions of the insane, but differing from it in its transient nature. I have frequently witnessed the conversation with one of these spectral beings instantly terminated, and the whole illusion dispelled, on opening the window curtains of the room; whilst the invalid has thus expressed himself: "Bless me! I thought I was talking with Mr. ——, just now; I must have been dreaming; for now I recollect he has been dead many years." A twilight obscurity in the sick-room is often more productive of these illusions than darkness.

Fumigation.

After every contagious disease, like diphtheria, scarlet fever, etc., the room, furniture, bed, etc., are to be thoroughly disinfected, to prevent the development and spreading of the germs.

Sulphur fumes have been used for many years for this purpose, but this method is not secure, agreeable nor efficient. It no doubt kills many germs exposed any length of time to its fumes, but never destroys their spores. So much so-called fumigation, as usually practised, is useless, that it might as well not have been done, as it gives a false impression of security. Most virulent germs are capable of reproduction and dissemination years after their original occupation of a house. Old bedding and clothing, brought out months after the so-called fumigation, have caused the death of many a little one, and the dangerous sickness of others.

Sulphur and its allies have been found to be so altogether uncertain and untrustworthy that boards of health are no longer willing to endorse its usefulness.

The only reliable, practical measure against the life of contagious germs is the same as now used in case of surgical diseases. *Corrosive sublimate*, *carbolic acid*, *boiling water*, *steaming*, and *baking* are sure and safe remedies.

Of this number *corrosive sublimate* is easily the leader in efficiency. It is not the dangerous drug to use as commonly supposed, since the quantity necessary to kill cannot be collected in a room subjected to its use. Every piece of furniture and all woodwork, even the paper of the wall, can be safely washed in a solution of this drug, made by dissolving one tablet in two quarts of water, and fear need not be entertained, either, of its efficacy or its harmfulness. Doors, windows, and other woodwork should be thoroughly washed with it. Carpets should be first wet with it from a sprinkler, dried and beaten. The paper need not be removed, if only it can be wiped with this solution. Bedding should be steamed, bed-clothing boiled, and all articles not readily washed may be likewise steamed. A solution of *carbolic acid*, 1 part to 40 of water, is likewise efficient. The great danger of doing poor work in the matter of fumigation lies in the practice of carrying things out of the room during the illness, before fumigation has been commenced. The nurse or mother travelling from one room to another may carry in her clothing germs sufficient to infect a whole neighborhood. The attendants of such a case should wear some thin linen, cotton, cambric, or other washable dress, that may now and then be put into the boiler, and thus thoroughly cleansed.

The hair of patient and attendant should be thoroughly washed in the *corrosive* wash on leaving the room, before disinfection of same. Hands are to be scrubbed in soap and water, and then washed in *corrosive* solution on leaving the room, and finally the room is to be thoroughly aired.

If the work is done well and care has been exercised not to have contaminated other portions of the house except that occupied by the patient, all will be well. Frequently during the illness sheets wrung out of the *corrosive* solution are hung up on one side of the door to filter the air passing out of the room. It has also been found that the evaporation of some mild antiseptic in the room during the sickness not only modifies the virulence of the germ, but is actually beneficial in the treatment of these diseases. Of these drugs the following is an excellent combination, which may be evaporated in a tin dish-cover placed over a light, a stove, or other heated surface. It should be burned during the continuance of the disease.

Carbolic Acid, ...	1 oz.
Turpentine, ...	1 oz.
Oil of Eucalyptus, ...	1 oz.
Alcohol, ...	1 pint

Let the rate of evaporation be very slow, and, if much *carbolic acid* be used in case of children, see that the drug is not absorbed into the system to such extent as to cause black urine or a backache.

Sulphur Fumigation. — This mode of fumigating chambers after measles, scarlet fever, and diphtheria is perhaps the most common, and, while not an ideal method, it is very easy of application, and quite practical.

Buy two sulphur candles for every room to be fumigated, and, having lit them, shut up all windows and doors, and stuff all crevices in the doors with cotton batting. Allow the fumes to penetrate every closet and drawer for twenty-four hours. The room may then be occupied.

Nitric Acid Fumigation. — The efficiency of nitric acid in the form of gas, in arresting contagion, and in cleansing infected rooms, ships, and other places, is well established. To obtain the gas, pour one ounce of sulphuric acid upon two ounces of nitrate of potash in a large tea-cup, — the cup being placed in a basin containing hot water. The gas or vapor will be immediately disengaged.

This quantity will thoroughly cleanse a small apartment, but if used in a sick-room, should be placed at some distance from the patient. In a large room two cups will be required; and if a whole house is to be fumigated, let several be placed in various apartments, and the doors and windows be closed for half an hour.

Chloride of Zinc. — A solution of the chloride of zinc has great power in arresting contagion, and in cleansing infected places. A small quantity of it will, in a few minutes, cleanse the most offensive apartments.

Chloride of Lime. — This is one of the most powerful disinfecting or cleansing agents known. To prepare it for use, add four gallons of water to a pound of the chloride of lime; stir the mixture well, and after allowing it to settle for a short time, pour off the clear solution, and keep it in well-corked bottles.

Chloride of Soda. — This, in disinfecting power, is about equal to the chloride of lime. In order that it may retain its properties, it must be kept from the light, in a well-stopped glass bottle. When used, it must be mixed in the proportion of one ounce, or two large spoonfuls, to the pint of water. It is excellent for cleansing carbuncles, gangrenous sores, bad ulcers, ulcerated sore throat, and fetid discharges of every kind. A weak solution should be frequently applied.

Uses of Chlorides of Lime and Soda. — These articles almost instantly destroy every bad smell, and all effluvia arising from animal and vegetable decomposition, and entirely prevent their bad influence.

While infectious or contagious diseases prevail in large towns or cities, the rooms should be sprinkled, morning and evening, with some of one of these solutions. Some of it should be placed in the different rooms, in shallow dishes, — the small bed-rooms being particularly remembered.

It must be remembered that whatever can be boiled, like linen sheets, towels, etc., and whatever can be subjected to prolonged steaming, or the presence of boiling water, can be made absolutely clean and germ-free. No fear need be caused after such a disinfection.

In houses where there are typhoid and putrid fevers, and infectious complaints, it is highly proper to sprinkle the solution about the rooms, and occasionally upon the bed-linen; and the air of the room should be frequently renewed. A wineglassful added to the chamber-vessel or the bed-pan will remove all smell. The most frequently used disinfectants for the stools of typhoid patients is carbolic acid, in the strength of one teaspoonful to the pint of water; of this use half or third of the quantity for each stool.

Before sending the bed and other linen to the wash, let it be immersed, five or six minutes, in one of these solutions, diluted, as mere washing will not always remove the infection. But the linen should be immediately rinsed in pure water after the immersion; to allow it to dry without such rinsing might injure it.

By pouring a quart of one of these mixtures, added to a pailful of water, into drains, sewers or cesspools, and repeating the application as may be required, will destroy all their offensive effluvia.

Meat will keep for some time without any taint, and without the molestation of flies, if immersed in one of these solutions for an instant, and hung up; and all tainted meat, fish, game, etc., will be rendered sweet by a little sprinkling of the same.

To purify water in cisterns, and destroy the animalcules in it, add to every one hundred gallons about a pint of one of the solutions.

The washing of bedsteads with one of the solutions, and putting it into all the crevices, will destroy bugs.

A room just painted may be slept in safely, if one of the mixtures be sprinkled about, and left in shallow dishes.

Stables, slaughter-houses, hog-sties, privies, and all places from which offensive smells arise, may be thoroughly purified by these mixtures; or, still better, by the use of sulphur-naphtha, "oil of milk," which is to be diluted in the proportion of one teaspoonful to a quart of water, and used very freely. This is one of the most excellent wound dressings now known, but should be used in one-half strength solutions.

Being guardians of the public health of such wide application, and of so great utility, it is surprising that they are not more used.

Freezing Mixtures.

In treating wounds, inflammation, etc., it is often quite important to have ice, where it is not to be obtained without manufacturing it. Accordingly, I give here a few directions for its immediate production.

The salts used should be in a crystallized state, with as much water in them as possible without being damp. They should be coarsely pulverized at the time of using, and put into the water contained in a basin, or other suitable vessel. The water to be frozen should be inclosed in a thin vessel, and immersed in the freezing mixture. To obtain extreme degrees of cold, the ingredients and the vessel should be cooled by one mixture before being mixed for another.

To five drams of pulverized hydrochlorate of ammonia, and five drams of pulverized nitrate of potash (nitre), add two ounces of water, in a tin, stone-ware, or glass vessel, and you may freeze water, sea-water, milk, vinegar, or oil of turpentine. It will cause the thermometer to sink from 50° above zero to 10° above; that is, *forty degrees.*

A mixture of five drams of sulphate of soda, and four drams of diluted sulphuric acid, will sink the thermometer seven degrees lower than the above, namely, down to 3° above zero, or *twenty-nine degrees below the freezing point.*

If six drams of sulphate of soda, four drams of hydrochlorate of ammonia, two drams of nitrate of potash, and four drams of diluted nitric acid be put together, the mixture will lower the thermometer 60°; that is, to 10° below zero, or 42° below the freezing point.

Besides the above the following combination may be used:

Muriate of ammonia, five ounces; nitrate of potash, five ounces; water, sixteen ounces. Mix.

Nitrate of ammonia, four ounces; crystalized carbonate of soda, four ounces; water, four ounces. Mix.

Nitrate of ammonia and water, equal parts. Mix.

Nitrate of ammonia and nitrate of potash, five parts each; sulphate of soda, eight parts; and water, sixteen parts. Mix.

Phosphate of soda, nine parts; diluted nitric acid, four parts. Mix.

Sulphate of soda, eight parts; muriatic acid, five parts. Mix.

Sulphate of soda, six parts; nitrate of ammonia, five parts; diluted nitric acid, four parts. Mix.

Freezing Mixtures with Ice. — Snow or pounded ice, two parts; salt, one part. Mix. This will sink the thermometer to 5° below zero.

Snow or pounded ice, four parts; salt, two parts; muriate of ammonia, one part. In this mixture the thermometer will go down to 12° below zero.

Snow or pounded ice, twenty-four parts; common salt, ten parts; muriate of ammonia, five parts; nitrate of potassa, five parts. Mix. Gives 18° below zero.

Snow or pounded ice, twelve parts; common salt, five parts; nitrate of ammonia, five parts. Mix. Gives 25° below zero.

Snow, eight parts; muriatic acid, five parts. Mix. Gives 27° below zero.

Snow, seven parts; diluted nitric acid, four parts. Mix. Gives 30° below zero.

Snow, four parts; chloride of calcium, five parts. Mix. Gives 40° below zero.

Snow, three parts; potassa, four parts. Mix. Gives 51° below zero, or 83° below the freezing point.

The Nurse. — When all the arrangements are completed in the sick-room, little benefit can be anticipated if a proper nurse be not obtained to render them available to the invalid. Every female who wishes to act as a sick-nurse should be obliged to serve a certain time as an assistant nurse in one of the public hospitals, and to receive a certificate of her efficiency before she leaves the establishment. The advantages which the public derive from a body of nurses educated in this manner must be obvious to every one.

In hiring a sick-nurse, the qualifications which should regulate our choice refer to *age*, *strength*, *health*, *temper*, *disposition*, *habits* and *education*.

Age. — She should not be under twenty-five, nor above fifty-five years of age. This period is fixed upon on account both of the physical powers and the moral conduct of the individual. Under twenty-five, the strength of a woman has not reached its maturity, and is scarcely adequate for lifting patients in and out of bed, and for many other duties which require strength, connected with the office of a nurse; but the strength and the muscular power in females begin to fail after fifty-five, when the natural transition from maturity to decay takes place.

Strength. — The foregoing remarks respecting age render it almost unnecessary to say that a woman of a naturally delicate frame of body is unfit for a sick-nurse; at the same time, a coarse, heavy, and masculine woman is, for many reasons, objectionable. Whilst strength is requisite, the frame should be such as to indicate activity.

Health. — None of the qualifications of a sick-nurse are of more importance than health. An individual who herself requires attention is ill-calculated to attend upon others. A woman who is asthmatic, or has any difficulty of breathing, or a habitual cough; who is rheumatic or gouty, or has any spasmodic affection; who is afflicted with palpitation; or suffers from periodical headache, vertigo, or a tendency to paralysis; or who is consumptive, or scrofulous; or has defective sight or hearing; or anything which causes decrepitude, is disqualified for a sick-nurse. It is important, also, to ascertain that there is no hypochondriacal or hysterical tendency, nor predisposition to mental depression.

Temper and Disposition. — It is scarcely requisite to say that an attendant upon the sick should possess a happy, cheerful, equal flow of spirits; a temper not easily ruffled; and kind and sympathetic feelings; but, at the same time, not such as to interfere with firmness of character. The expression of the countenance should be open and winning, so as to attract the good-will and confidence of the invalid: a pleasing and gentle manner being more likely to gain esteem, and insure obedience to the orders of the physician, than the most persuasive arguments which can be addressed to the understanding of the patient.

A collected, cheerful expression of the countenance, in the attendant on the sick, is likely to inspire hope, and to aid the efforts of the physician for the recovery of his patient.

The general disposition of a sick-nurse should be obliging. Every little office, which the invalid may require to be done, should be performed at once, and without the smallest apparent reluctance, even when the necessity for its immediate performance is not absolute. There is also an earnestness of manner, which should, if possible, be obtained or acquiesced in by the sick-nurse, as it impresses the idea that she feels deeply interested in the case; a circumstance which is always highly appreciated by the patient.

Finally, it is unnecessary to say that a nurse should be honest, as no description of servant has so much in her power. But the honesty of the nurse is not to be measured by her respect for property; she must be above imposing on the physician, with respect either to medicines or to diet. Her religion, also, should be sincere, but not pharisaical; and although she may occasionally persuade her charge "to put his trust in God, the fountain of health," * yet she must recollect that preaching is not her province; and, when mistimed, even the best advice may prove not only profitless, but injurious; and this is especially likely to be the result when the doctrines she professes are of a controversial kind.

With respect to gossiping, it is a detestable habit under any circumstances; but in a nurse it may be productive of the greatest danger, produce family feuds, and a thousand other evils.

In her Habits, a sick-nurse should be sober, active, orderly, and clean, and neat in her person.

The first of these habits — namely, *sobriety* — is so essential a qualification in every attendant in the sick-room, that it requires no comment. Happily, the desire for ardent spirits is now less frequent than formerly, when women were seldom employed as nurses until they were nearly superannuated, and until their habits, good or bad, were too firmly rooted to be removed.

The Activity essential for a good nurse does not imply a bustling or fidgety manner, but a quiet, steady method of proceeding in the performance of her duties, equally devoid of fluster, turbulence or noise. This activity is generally associated with orderly habits; a most valuable qualification, and without which the sick-room becomes a scene of confusion and disgust. Every medical man must have witnessed this state of disorder with regret, when, on visiting his patient, he finds no chair to sit upon until some article of bedding or of clothing be removed from it, and the seat dusted with the apron of the nurse; and when a former prescription, or anything else, is wanted, he must wait until the nurse rummages out half a dozen of drawers in search of it.

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* Fuller.

Another quality, usually conjoined with activity and orderly habits in a nurse, is cleanliness in her own person and in that of her charge, as well as that of the sick-room. The dress of a nurse should be simple and neat, without trimmings. Nothing is more out of place than a fine lady attempting to perform the duties of a nurse.

Education. — It may appear a refinement to talk of the *education* of a nurse; but there is not a greater difference between noon-day and midnight than between an educated and an ignorant nurse. The former is often an aid to the physician, not only in carrying his orders into effect, but by observing and informing him of symptoms of great importance which have occurred during his absence; whereas the latter is a source of constant anxiety, and too often assumes the privilege of acting in direct contradiction to his orders, and according to her own opinion.

Unhired Attendants.

The selection of a good nurse, however eminently qualified she may be for her duties, does not supersede the attendance of a relative or friend in the sick-room; on the contrary, I can conceive no condition so deplorable as that of an invalid left altogether to the care and management of a hireling. It is, nevertheless, too true that few ladies, even those who are wives and mothers, have any acquaintance with the arrangements of the sick-room, and the management of the invalid; they are, consequently, too often forced to be guided by, and to rely for instruction on, the nurse, instead of being able to superintend her conduct, to ascertain that she performs her duty, and to correct her failings.

The degree of *intelligence* which is demanded in a nurse is very different from that which is requisite for a wife or a relative in the sick-room. The intelligence of the nurse is directed to supply the wants of the invalid, to administer to his comforts, and to obey the instructions of the physician; that of the friend or relative involves the power of discriminating disposition and temper; of watching the progress of the disease, and judging of the propriety of not pursuing certain measures, which, although indicated by the symptoms at the time of prescribing, yet may require to be altered, and consequently detailed to the physician, whose presence may be requisite before his next intended visit. It is of the utmost importance, also, that relatives attending in the sick-room should be able to control their feelings in the presence of the invalid.

Nothing is more essential, in the domestic management of diseases, than a knowledge of the natural disposition and temper of the invalid. An irritable or a passionate man requires a very different management from that which is proper for a man of naturally mild and easy disposition. Disease awakens, in an augmented degree, the irritability of the former; he becomes impatient of contradiction; and every time his opinions are injudiciously opposed, the turbulent agitation of the nervous system which follows either increases the disease or weakens the influence of the remedial agents. On the other hand, a mild and gentle disposition often leads to extreme sensitiveness, when disease attacks the body; a word, a look, is sufficient to touch some sympathetic cord: to unstring the whole nervous system; and to augment the morbid susceptibility already present in the habit to a degree that is not always devoid of danger. Much discretion and judgment, therefore, are requisite in both instances; in the one case, to prevent ebullitions of temper; in the other, to refrain from anything that might be construed by the invalid into harshness; and yet at the same time, in each case, to maintain that influence over the patient which the treatment of every disease demands in an attendant on the sick.

Prejudice and Antipathies.—In those who are imperfectly or erroneously educated, the judgment is apt to be biassed by *prejudice* and *antipathies;* and, under the influence of these, it is misdirected in a manner of which the individual is often wholly unconscious; thence the necessity of freedom from prejudice in the attendants in the sick-room, and the farther importance of the friends or relatives of the sick being able to superintend the conduct and the management of hired nurses. On the other hand, the judgment, even in the well-educated, is apt to be misled by the *affections*, the influence of which is as much opposed to the healthy exercise of discrimination as the prejudices of the ignorant. Self-control, therefore, is also an essential qualification of the sick-room.

It is only from knowing that the attendants of the sick are possessed of intelligence and self-control, that a physician can rely upon having his orders correctly and duly executed; when those qualities are absent, he has to dread, on the one hand, the presumption of ignorant prejudice; and on the other, the improper yielding of sensitive indulgence. To the invalid, also, it is important to know that the directions of his physician are filled by an intelligent person; for, even in the most severe diseases, as long as the mental faculties remain unaffected, a sick man is capable of detecting ignorance, or the effects of prejudice, in his attendants; and, when he is convinced of the existence of either, all the influence of the individual, whether nurse, or friend, or relative, is at an end.

Were the business of the sick-room (independent of the wants and comforts of the invalid) confined to the mere observation and collection of facts — namely, the noting of the symptoms of disease — and reporting them to the physician, it would be superfluous to urge the necessity of superior intelligence in its superintendent; but many of its duties require not only a well-regulated understanding, but an equally sound condition of the moral feelings and the benevolent affections, with a recognition of the authority of conscience in the whole operations of life. In the period of sickness, under the direction of the judicious and discreet, an invalid may be led to the investigation of his moral and religious condition, and to review his past conduct, with the determination of turning the result to his future welfare, should he happily recover and re-enter society. Surely such important duties as these cannot be intrusted to the unqualified, or the ignorant, or the hireling; nor can more be required to demonstrate the importance of adding to the other branches of female education a knowledge of the various important duties of the sick-room, which females, whether as mothers or daughters, or wives or friends, are likely to be called upon to fulfil.

Prognostics.

In every disease the medical attendant is naturally called upon to deliver his opinion of the degree of danger which hangs over the patient: hence, it is unnecessary to enter into any minute details on the subject of prognostics. But, as in many diseases changes occur, in the absence of the practitioner, which ought instantly to be examined into, in order that the danger likely to accrue from them may be averted, it is important that the friends and ordinary attendants of the sick should be aware of their presence, so as to obtain the immediate assistance of the medical attendant. Were this information, also, more generally diffused, many unnecessary visits would be saved to the physician, and much unfounded suspicion of danger prevented from distressing and torturing the minds of the friends of the sick.

In Fevers *delirium* alone should excite *no* alarm, unless it be very high, or of the low, muttering, incoherent kind. In jaundice, and in diseases of the chest, it is alarming; and in the latter stages of pulmonary consumption, its presence always indicates the approach of death.

Great *confusion of thought*, *loss of recollection* of the most recent occurrence, a restless, wandering eye, and a correspondent vacancy or confusion of countenance, are always to be dreaded in fevers and in diseases of the brain. An expression of *great anxiety* is equally alarming in all acute diseases; and a presentiment of death is still more to be dreaded.

Hoarseness, with constant spitting, occurring at an early period in small-pox, is very unfavorable.

Squinting in affections of the head ought to be particularly noticed, and mentioned to the attending practitioner; and the same remark applies to a greatly *contracted*, or a *dilated*, or an *immovable* condition of the pupil of the eye; or the turning up of the pupils under the upper eyelids.

Deafness is *not* an unfavorable occurrence in continued fever; but a sudden attack of headache in pulmonary diseases ought instantly to be mentioned to the physician.

The Sudden Disappearance of Pain in inflammatory affections of the bowels is always to be dreaded; but it does not in every instance portend the existence of mortification.

Cough, depending on inflammation of the bronchial membrane, suddenly supervening on a suppressed eruption, is always to be dreaded.

In Croup, when the breathing is *audible*, or when there is a *crowing* sound in inspiration, or a *cooing* or *croaking* respiration, danger is present.

In Whooping-Cough, when the paroxysms suddenly increase in violence, and the face becomes livid, and the thumbs are drawn across into the palms of the hands, the appearance of convulsions may be anticipated: hence immediate notice of these symptoms should be communicated to the medical attendant.

Rigors invariably excite alarm; but they are only dangerous in chronic internal diseases, in which they often indicate the formation of pus, or the existence of suppuration.

Pallidness of the countenance, with a slight degree of *lividity*, are symptoms of hazard in inflammation of the lungs.

The Position of the Patient as he lies in bed, especially in fevers, is of much importance. Constantly lying on his back, with a tendency to sink to the bottom of the bed; a propensity to keep the arms and the feet out of bed, and to uncover the trunk; or to pick the bed-clothes; tremors; twitching of the tendons; grinding of the teeth, and sleeping with the eyelids half open, and the white of the eyes only seen; are all justly regarded as symptoms of great danger.

Fainting (*Syncope*) is to be considered alarming in diseases of the heart, or during profuse bleeding from the nose, or from any other part: *deep sighing*, also, under such circumstances, is most unfavorable, and often indicates rapid dissolution.

Hiccup, in the advanced stages of either acute or chronic diseases, is invariably alarming.

Difficulty of Swallowing, also, in the advanced stages of fever, palsy, and affections of the head, always indicates extreme danger;

vomiting, on the contrary, is not unfavorable, unless it be very severe and protracted; but, if the ejected matters be putrid, or feculent, then the vomiting is always to be dreaded.

Coma, or an irresistible propensity to sleep, following the sudden suppression of gout, or the cessation of periodical bleeding in piles, or the healing of old sores, is always alarming, and requires prompt medical assistance.

Convulsions without fever or any affection of the head seldom prove dangerous; but they are never free from danger when they are accompanied with stupor or coma. They are also dangerous when inflammatory fever is present. They are less dangerous in women than in men, in the young than in advanced age. In infancy, convulsions are more to be dreaded in the robust than in the delicate and irritable child.

Diarrhœa is, under every circumstance, an unfavorable event, when it occurs either in fevers, or in the termination of chronic diseases; and the passing of involuntary stools, when scarcely any diarrhœa exists, is equally to be dreaded.

Retention of the Urine, as well as its *involuntary discharge*, is always an unfavorable symptom.

Purple Spots appearing on the skin, *livid lips* and *cheeks*, *oozing of blood*, *sudden flushings* followed by pallor, are unfavorable symptoms; and the appearance of œdematous swellings of the legs and skin in the last stage of organic diseases always indicate approaching death. When *purple spots*, also, appear in small-pox, with flattening of the pustules on the trunk of the body, and a white, pasty aspect of the eruption in the face; and if, at the same time, the extremities become cold, any hope of recovery can scarcely be entertained.

Great and continued or progressing *emaciation* in chronic diseases, and what is termed the *facies Hippocratica*, are to be dreaded.

Excoriations on the parts on which the body rests,—for example, the haunches, or the lower part of the back,—especially if these become livid and sloughy, always indicate extreme danger.

Great Difficulty of Breathing, even to a feeling of suffocation, is not necessarily hazardous in *asthma;* for although few diseases are so little under control by the interference of the physician, yet asthma seldom proves fatal, unless it tends to the production of other diseases.

In Consumption, partial sweating, as of the head, the chest, or the limbs, is always an unfavorable symptom.

When *pregnancy* occurs in a woman laboring under consumption, the disease is arrested until after delivery, as if Providence threw a shield over the mother for the safety of the offspring.

The Sudden Disappearance of Swelling of the Legs, in chronic organic diseases, is indicative of approaching death.

When a child, instead of rallying after any acute disease, becomes *emaciated*, and the belly is large and tympanitic, there is always much danger.

Bed-Sores.

The danger of bed-sores is often in proportion to the carelessness of the nurse, although the condition of the patient has much to do with it. They attack first the skin at the end of the spine, the hip-joints, knees, elbows and heels.

Debility from continued fever, from paralysis, old age, continued pressure, unclean bedding, and the untidy habits of the nurse, are the immediate cause.

The first appearance of a bed-sore is to be noticed in redness of the skin; soon a blister forms, the skin breaks away, leaving the surface raw and moist. Decomposition sets in very quickly if the symptoms are neglected, and the blister becomes an open sore.

The outcome of the disease depends upon the condition of the patient, and the removal or non-removal of the cause.

Treatment. — If there is much debility, tonics should be given. The various places of the body which are likely to become sore should be rubbed four times a day, from five to ten minutes, with a stimulating mixture like spirits of camphor or olive-oil and brandy; a good liniment is alcohol or weak bay rum. Be careful not to irritate the skin, —simply cleanse and harden. The prominences of bone may be covered with surgeon-plaster if there is sweating of the body. Unless a blister forms, the part should be relieved of pressure by air-cushions. Collodion should be applied, and the parts kept dry.

If the blister turns to an open sore, use poultices until it is open and the matter discharged, then use stimulating cleansing washes of borax-water or weak carbolic-acid. Peruvian balsam on cotton-wool is a good remedy.

The best preventive measures are careful nursing, dry, smooth sheets, air-cushions, frequent changes of position. The bedding and night-robe should be absolutely clean, dry and smooth and frequently changed.

Ovarian Disease.

Or, as it is usually termed, *ovarian dropsy*, has hitherto proved incurable; but it is relieved by tapping; and, if the powers of life be sustained by proper food, and carriage exercise in the open air; and if all medicines be let alone, except such as are required to regulate the bowels, life may be sustained for many years.

All diseases not involving organic changes are, with a few exceptions, more or less under the control of medicines, and are consequently curable. But some diseases, in which no organic changes have been discovered, are nevertheless incurable. This is the case with spasmodic asthma, which has rarely been cured.

It is true that functional disturbances are not unfrequently associated with organic diseases; but, under such circumstances, it is the province of the attending physician to point out to the friends of the patient the greater or the less degree of danger in these complications.

Diet, etc., in Disease and Convalescence.

In numerous instances, much hazard often exists after disease has disappeared, and when the patient is declared convalescent; and as this period in the removal of diseases is left to the management either of the patient himself or of his friends, some general remarks respecting it, and also in reference to particular diseases, are requisite.

In every recovery from sickness, whether external or internal, before the salutary advantages obtained from the treatment be confirmed, the organ or part which has suffered must be either left at rest or be used, according to the nature of the case. Thus, if any part have suffered from inflammation, it must not be used for some time after the inflammation is subdued. If the eyes have suffered, the person must neither read nor write, nor expose the eyes to the heat of the fire, nor to a strong light, until some days after every trace of the disease has disappeared. If the arm has been affected it must be kept at rest; and if the leg, not only should walking be refrained from, but the limb should be placed rather higher than the trunk of the body. If the previous disease has affected the brain, every mental exertion must be avoided; and so on, whatever may be the ergan which has especially suffered. Even when the exercise of the organ is resumed, it should not be carried to fatigue, nor, on any account, should it be such as to produce excitement. At the same time, it must not be forgotten that, in the treatment of external injuries, when it has been necessary to keep the limb long in a sling, in one position, — as, for instance, in fractures, — the muscles which bend the arm acquire from the habit a contraction which cannot be overcome by the antagonist muscles, owing to the length of time they have been on the stretch, weakening their contractile power. The arm, therefore, should be frequently taken from the sling, and, being rested upon the elbow, a moderate weight should be held in the hand, and friction with oil employed upon the contracted muscles. It is true that surgeons usually give directions for this operation, before they quit the management of the case; but surgeons, as well as physicians, are sometimes dismissed before the convalescence is complete; on which account, arms and limbs have remained contracted for life, from a want of the knowledge necessary to counteract the evil at an early stage. I say nothing respecting the continuance of remedies during convalescence from many diseases, except urging the necessity of regulating the bowels.

The most important part of the management of convalescence certainly refers to *air*, *exercise*, and *diet*. The errors daily committed, in all these matters, exert the most powerful influence in retarding complete restoration to health; and often, indeed, induce evils of a more formidable kind than the diseases from which the patients have just emerged.

1. *Air*. In every convalescence, whatever may have been the nature of the disease, if it has been so severe as to wear down the strength of the invalid, country air is essential. The benevolent Author of our existence has made medicinal the hills, the vales, the groves, and all the harmonies of nature; and in the repose of these man finds a balm, not only for a wounded spirit, but for his stricken body.

In selecting a country residence for a convalescent, care must be taken to ascertain whether any source of malaria exists in the neighborhood; as, in that case, even if all other circumstances be favorable, the place is exceptionable.

2. *Exercise*. In convalescence, much caution is requisite in apportioning the exercise to the degree of returning strength. When the convalescent is still too feeble to take sufficient exercise on foot, the best substitute for it is riding horseback; but, as soon as walking can be borne, it should be preferred to either horse or carriage exercise.

3. *Diet*. In health, diet may be left, in a great degree, to the inclination or the taste, as far as regards the quality of the food; and, although diseases occasionally originate from repletion, yet, in general, the appetite may be considered as the best regulator of quantity, when the food is simple, and the appetite is not pampered by high seasoning and rich sauces. In disease, however, a very opposite rule is to be observed; the regulation of both the quantity and the quality of the food is of the utmost importance. The taste is often so perverted as to desire that which would prove injurious; and were appetite to be the guide of quantity, diseases would frequently not only be increased in severity, but life itself would be brought into jeopardy.

As soon as solid animal food can be taken with impunity, that which is most digestible should be selected. An opinion has generally prevailed that gelatinous matters, and meats which readily yield jelly, — such, for example, as veal and lamb, — are the most easily digested, and at the same time are also the most nutritive. This is a mistake; for, with the exception of poultry, the flesh of young animals is stringy and of a lax fibre, and is even less easily digested than that of too old animals, which presents great density of texture. The middle-aged animals afford the most digestible food.

Nothing tends to lessen the density of the fibre of every kind of animal food so much as keeping it for a certain time before it is cooked. In this case the tenderness is the result of incipient decomposition or putrefaction; but the utmost caution is requisite to prevent this from advancing so far as to present the slightest trace of taint in the food of the convalescent. In the low state of vitality in convalescence, the change which commencing decomposition (putrefaction) causes, renders animal food in that condition a source likely to occasion either a relapse into the disease from which the patient has recovered, or to form a new disease.

In examining the relative value of other articles of diet adapted for the sick and convalescent, the first which presents itself to our notice is

Milk. — As milk is the food of almost all young animals, its digestibility appears at once evident; and there can be little doubt that it is very digestible, when it is drunk immediately after it is drawn from the udder of the cow or the goat, before its components have time to separate. When this separation is effected, either spontaneously by time, or by means of rennet or other agents, its properties are altered, and its digestibility is lessened.

Cream, when intimately united with the other components of milk, — namely, the curd, or the caseous part, and the whey, — is not the same substance as after its separation. In the milk, it is more easily digested, and is the most nutritive part of the milk. But in its separate state it is ill adapted either for the sick or convalescent except in the form of butter, which is not unwholesome unless it be eaten in excess or be melted. Although cream is not as digestible as milk, yet it is much less liable to turn acid in the stomach; it is often beneficial to dyspeptics, either alone or diluted with water. In the same manner the separate *curd* is indigestible; and *whey* itself, although highly nutritive, yet is flatulent; nevertheless, it is an excellent demulcent in many cases of disease. But none of the components of milk are equal to milk itself. It is often necessary, in convalescence, to dilute it with water.

Eggs. — It is not uncommon to hear that the yolk of a raw egg, beaten up with water and sugar, with the addition of a small quantity of white wine, is a light and nutritive aliment in convalescence, and even in some states of disease; but *eggs* are much less digestible in this form than when they are lightly boiled. In jaundice, however, arising from viscid mucus obstructing the orifice of the common duct, the yolk of a raw egg beaten up with cold water is serviceable.

Fish, at least the white kind, stimulates much less than the flesh of land animals; hence it is a proper food for those laboring under some acute diseases; and also for convalescents, when a sudden return to more stimulating food would prove hurtful. But it is not adapted for convalescents when the object is to bring up rapidly the strength of debilitated habits.

Raw *oysters* have been erroneously supposed to be both easy of digestion and nutritive. The latter opinion is, in some degree, true;

but the former is erroneous. Raw oysters are less digestible than plainly-cooked oysters. Both are improper for the sick and for early convalescents. Lobsters, crabs, prawns, cray-fish, scallops, and other shell-fish, are still more objectionable.

If fish of any kind be admissible, it should be simply boiled; fried fish is even worse for invalids than the outside or the brown of roasted meat.

Vegetables. — In reference to *vegetable diet*, it is only the mildest description of esculent roots that are fitted for the use of the sick. In preparing all of them for the sick room, they should be well boiled in two distinct waters, until they are soft and very soluble, and in a state not to leave undissolved anything which could act as a mechanical irritant on the intestinal canal. When properly cooked, they are moderately nutritive, and free from any stimulant properties; and they are well adapted for the stomach of the sick, unless in cases in which the torpor of the organ is such as to permit them to run into acetous fermentation and to prove flatulent.

Fruits. — With respect to *fruits*, they produce the most diversified effects; and, consequently, are more or less proper for invalids, according to circumstances, either connected with themselves or with the condition of the patient at the time. The stone-fruits, with the exception of the ripe peach, or the nectarine, are to be rejected. The apple tribe, except very soluble pears, are still less admissible. The apple, however, when roasted, and when the seeds and the hard central parts, as well as the skin, are removed, is less objectionable; and, as it possesses laxative properties, the roasted apple is well adapted for the sick, when food is at all allowable, and when the bowels are torpid. The orange, if fully ripe, is grateful and wholesome to all invalids, and is only equalled in these qualities by the grape; but in using the orange, the pulp should be rejected. The juice of the grape-fruit is good and refreshing, but care should be taken not to use any of the pulp, on account of its bitter taste. Care also should be taken not to swallow either the skin or the seeds of the grape. Strawberries are a little stimulant, of easy digestion, and more cooling than the other small fruits; mulberries are also unexceptionable; but currants and gooseberries, and even raspberries, are not free from objection for invalids laboring under acute diseases.

With the exception of *oat* and *wheaten bread*, especially that made from Franklin Mills flour (see receipt), all the varieties of farinaceous aliments may be regarded as modifications of starch, containing little nutritive matter, and therefore well adapted for the sick-room. It has been supposed that arrow-root, sago, tapioca, and similar substances, are very nutritive, because they form mucilages with boiling water; but this is not the fact; and were they very nutritive, they would be ill adapted for invalids. Rice, in every case where the stomach is in an acescent state, is preferable to the other farinaceæ, because it is less fermentable.

The farinaceous food which is ordered in the convalescence of children from acute diseases, is often made of bread so as to constitute *pap*. No description of food has a greater tendency than this to become sour; a quantity only sufficient for a single meal, therefore, should be made at a time; for what remains is always sour before the next meal; and even if the quantity be small, and it be mixed with fresh pap, it communicates its faculty of becoming sour to the whole mass.

Fluid Aliments.

Water. — The best and the most universal beverage for the sick is *water:* but the qualities of water differ, according to the sources whence it is procured. The fewer foreign ingredients it holds in solution the greater are its diluent properties. Distilled water, or rain or river water filtered, and that of soft-water springs which filtrate through silicious strata, are the only kinds proper for the use of the sick-room. Hard water, under whatever name it is found, whether as spring water, or pump water, or well water, should be excluded. The impurities of river and rain water are merely held in suspension; consequently, they are readily removed by filtration.

Water itself is aliment; many individuals under certain circumstances have lived for a considerable time upon it alone. Those who live chiefly on animal food require more drink than those who eat much vegetable matter.

The influence of water on the animal economy may be regarded in two points of view:

As an article of diet.
As a medicinal agent.

As an *article of diet*, in health, water is the beverage provided by nature for all animals, man not excepted. The sensation of thirst is the natural call for fluids, either to assist digestion, or to allay a dry, hot condition of the mouth and the gullet. The consequence of not satisfying this call is fever of a nervous kind; and, if it be long resisted, inflammation of the air-passages. On the other hand, too much fluid is injurious; for although the vital powers of the stomach counteract the tendency which it affords, by over-diluting the gastric fluid, to the fermentation of the aliment in the stomach, yet when it is in excess, those vital powers languish; hence spontaneous chemical changes in the contents of the stomach take place, and induce dyspepsia. For all the purposes of dilution *in health*, water is adequate, and it is the only truly wholesome beverage.

As a *medicinal agent*, water is demanded in every disease in which a dry skin and an elevation of the natural heat of the surface, constituting fever, are present. In this case, the desire is for cold water or cooling fluids; and it should always be indulged. The degree of temperature, however, must be regulated by the condition of the invalid; but the best medium temperature is between 50° and 60°

Fahr., although even 60° is too low, when the debility of the frame is considerable.

The qualities of the various kinds of beverages proper, and generally employed in the sick-room, should be known.

Toast-water, when properly prepared, which it seldom is, forms a useful beverage in the sick-room. It is slightly nutritive, owing to its containing a small portion of gluten, in conjunction with fecula and sugar. It is one of the oldest and one of the best diluent demulcents; diluting at the same time that it softens the acridity of the secreted juices of the stomach, in febrile diseases.

Gruel, whether made of groats or of oatmeal, is less mild and demulcent than barley-water; and it is more likely to undergo the acetous fermentation in the heat of the stomach; a circumstance which is greatly favored by the sugar and butter which is sometimes added to it. Unless gruel be very thin, it can scarcely be regarded as diluent; and when thick, it is too heating an aliment for patients laboring under febrile symptoms.

Tea, in the form in which it is usually taken, is too stimulant and astringent to be a good diluent: and, when it is strong, the narcotic property which it possesses renders it improper for most invalids, whatever may be the nature of their diseases. As it is, nevertheless, agreeable to most palates, and very refreshing, it may be taken in moderate quantity, provided it be not strong, without any hazard.

Sage, *balm*, and *mint teas*, are often substituted for common tea. Each of them undoubtedly allays the irritability of the stomach in some cases; but, as general beverages in disease, they are less useful than toast-water. *Raspberry vinegar*, *lemonade*, *tamarind tea*, *apple tea*, and similar compound diluents, should never be administered without the consent of a physician. If a patient be taking an antimonial, they will excite vomiting; if a mercurial, griping; and they are equally incompatible with many other medicines, and with many conditions of the stomach in disease. They are a description of beverage greatly recommended and largely distributed by the Lady Bountifuls in the country, and have frequently been productive of serious mischief.

Coffee is more heating, and consequently less admissible than tea; it may, however, be taken, if it be largely combined with milk. *Cocoa* and *chocolate* are still more objectionable than either tea or coffee in the sick-room. Shells are good and nourishing.

With respect to the Number of Meals, and the periods best adapted for taking them, it is scarcely requisite to remark, that, although in health three moderate meals, at proper intervals, are customary, and well adapted for the support of the frame, yet, under the changed condition of the system in disease, it would be improper to take any regular number of meals, or to observe any stated periods for taking them: hence no general rules can apply.

As a general rule, in the decline of diseases, and on the approach of convalescence, when the desire for taking food returns, the best time for the principal meal, *dinner*, is about two hours after noon. If the breakfast be taken at nine o'clock, and the evening meal at seven, the hour of two is the middle period of the day; so that, when dinner is taken at that time, the intervals between breakfast and dinner, and between dinner and supper, are not only equal, but neither is too short to limit the complete digestion of the previous meal, nor too long to injure the powers of the weakened stomach by protracted fasting.

All acute diseases require more or less abstinence, especially when the object of the treatment is to lower the system; and in some chronic affections, abstinence is almost essential. If this be true, the necessity of the strictest observance of the directions of the physician on this subject must be obvious. It is one, however, which is not only neglected, but is often combated both by nurses and friends; and indulgences, which are supposed to be of too trivial a nature to cause any injury to the sick, have often been followed by fatal effects.

But, although abstinence be requisite during the existence of an acute disease, yet it is injurious when it is too rigidly maintained after convalescence is actually established: it often induces a new train of symptoms, not very unlike those for which it was properly prescribed and the removal of which it has aided; namely, acceleration of the pulse, increased impetus of the heart, headache, and even delirium.

General Diseases.

Happily, in *febrile affections*, the appetite of the invalid is not in a condition to desire food; and no stronger demonstration can be required of the impropriety of forcing it upon him under such circumstances. Simple fluids, such as diluents, are all that he desires, all that the stomach can bear; and such alone should be administered in fever, before that low condition of the system, which demands the use of wine or other stimulants, supervenes. In these cases, when the patient desires more nourishment than is usual, animal food ought not to be given, unless by the direct recommendation of the physician. Indeed, in general, the inclination of the invalid happily revolts from animal food, as much as experience condemns its administration.

While febrile symptoms are present, farinaceous matters, little nutritious, such as barley-water, gruel, arrow-root mucilage, or sago, acidulated with lemon-juice, and sweetened to the taste of the patient, are most suitable; but even these should be given in small quantity, and at considerable intervals. The beverage generally most agreeable, and also most salutary, to those suffering under fever, is cold water.

In the decline of fevers, even, as I have already remarked, although the severity respecting diet should be relaxed, yet much danger may result from mistaken kindness and over-zeal, in urging animal and stimulant food at too early a period of the convalescence. Indeed, the necessity of caution at this time is greater than during the continuance of the fever; and the more acute the disease has been, the greater must be the caution in the convalescence, especially if the treatment has been of an evacuant and lowering description.

The first change of diet, in the decline of fevers, should be to another article of the same kind of food which was allowed in the disease; for example, from simple *arrow-root mucilage* to *arrow-root and milk*, or to some other of the farinaceous compounds; whilst, at the same time, *asses' milk* may be given in small quantity in the morning. *Rice*, one of the farinaceæ, is generally supposed to be astringent, but this is a mistake. It forms an excellent diet in all cases of early but decided convalescence. It should be well-boiled, and mixed either with broth and beef-tea, or gravy which has been cooled, and the fat taken from it. In the transition to animal food, *beef-tea*, *chicken-broth*, and *mutton-broth*, and other liquid animal decoctions, should be first resorted to; then *white fish*, simply cooked; for, although fish is more digestible than animal food, yet it affords much less stimulant nourishment; it is therefore better fitted for the early stage of convalescence. When convalescence is completed, a more generous diet is admissible.

With respect to beverage, *water*, *toast-water* or *lemon-peel-water*, is sufficient, until the medical attendant declares that a little wine is requisite.

In convalescence from *fever*, it is an error to permit the patient to get up too soon. He should not leave his bed until his strength be considerably advanced. No danger can result from too strict an observance of this rule; whereas much risk may be incurred by its neglect.

If the head has been much affected, every mental exertion should be refrained from during the convalescence; and, according to the degree of suffering in any local organ, precautions must be taken to guard that part of the frame against a fresh attack of disease.

Eruptive Fevers require more precaution in convalescence than general fevers, both as regards diet and exposure to sudden alternations of heat and cold. This is more especially essential after measles and scarlet fever.

Measles are often followed by a distressing cough, and other symptoms of pulmonary inflammation; or by a harassing diarrhœa, which wears down the strength; or by inflamed eyes, catarrh, or obstinate toothache. In infants, *canker of the mouth* occasionally makes its attack, and proves fatal. All these affections, after measles, might generally be prevented by taking care not to allow too soon a return to the use of animal food, or too early an exposure to cold or to night-air. Even in summer, flannel should be worn next the skin for some weeks after the disease has disappeared.

Scarlatina is frequently followed by dropsical symptoms; which, however, might generally be avoided by the same attention to diet and regimen as after measles.

Small-Pox, when severe, and especially when confluent, is very apt to awaken into activity the dormant seeds of scrofula, if any hereditary taint exists in the constitution; hence abscesses, ulcers, and swelled glands make their appearance. These demand the aid of the physician or the surgeon. But if the convalescent be properly dieted, and recourse be had to a change of air as soon as his strength will permit, these evils may be avoided.

Erysipelas not unfrequently attacks convalescents from small-pox and other eruptive fevers. When it occurs, independent of any prior disease, the same attention to diet and regimen is requisite as in other eruptive fevers.

Convulsions, it is well known, are not unfrequently the result of errors in diet, in individuals with an irritable condition of the stomach and bowels. Advice should always be demanded respecting the diet of those who are liable to, and who suffer from, convulsions; but it must not be supposed that when they occur in children and have been subdued, a system of starvation is necessary to prevent their recurrence. As far as regards convalescence in such cases, it will be proper to bear in recollection the following rules:

1. When the patient is of a *full habit*, has a short neck, and a tendency to diseases of the head, the diet should be spare. The use of animal food, indeed, in such a habit, should be *wholly* prohibited in childhood, and very sparingly employed by adults; whilst vegetables, farinaceous matters, milk and weak broths, may be allowed.
2. When the habit of body is *spare*, and when languor and chilliness are present, the diet, although free from stimulus, yet should be nourishing, and consist of the lighter kinds of animal food; namely, poultry and fish, with a moderate share of vegetable matters.
3. Under all circumstances, and at every period of life, fermented liquors and wine should be either wholly avoided, or very sparingly used, in almost all convulsive diseases connected with affections of the head.

In convalescence from some varieties of convulsive diseases, the nature of the diet must depend on circumstances which cannot be judged of by the attendants of the sick-room; hence it should be referred solely to the medical attendant. In *St. Vitus's Dance* (chorea), for example, although a tonic plan of treatment may have been successfully pursued, yet the diet may be required to be mild, and wholly free from stimulus.

Attention to diet in *Hysteria* is most important. When the disease is connected with indigestion, the meals should be moderate: and rest in the horizontal posture should be indulged for an hour afterwards, and then moderate exercise taken. Fluid food, such as broths and gruel, are improper; yet animal food should be eaten only once a day. Tea and coffee should be very sparingly taken; and the simplest beverages, even water and toast-water, should be taken in great moderation after a meal, and should not be drunk during dinner.

In convalescence from hysteria, change of scene and air are absolutely requisite. The mind should be directed to solid studies, and everything which can cherish morbid sensibility of the nervous system avoided.

Dropsy. — An opinion was long maintained that fluids are to be withheld from *dropsical* patients. No opinion was ever founded on more erroneous principles. Dropsical patients, indeed, should be allowed the free use of fluids. With respect to diet, it should, generally speaking, be light and unstimulating: but much depends on the causes of dropsy. There is, however, less necessity for a rigid adherence to low diet in this than in other inflammatory affections.

In Palsy, abstinence from all stimulating food, solid or fluid, must be rigidly observed; and the restriction should not be discontinued in convalescence. At the same time, change of air and of scene is always of decided advantage. In every instance, an easy state of mind, and freedom from every source of irritation, as well as from the anxieties of business, are indispensable.

Gout and Rheumatism. — In no diseases affecting the general habit are abstinence and repose more essential during the attacks than in the two which head this paragraph, when they assume an acute form. When they occur in weakened or in broken-down habits, it is too often supposed that the opposite plan of diet is to be pursued, and that stimulating food and a liberal supply of wine should be indulged; but nothing is more likely to prove injurious.

When the paroxysm subsides, it is too customary to permit the invalid to glide into his usual habits with respect to diet and regimen; consequently the plethora which originated the disease gradually returns; and the same plan being continued, paroxysm follows after paroxysm, at shortening intervals, until scarcely any interval occurs, and life is sacrificed on the altar of self-indulgence.

For some weeks after the paroxysm of gout has subsided, in a young or middle-aged man, animal food should be sparingly taken, and fermented liquors altogether avoided.

Chlorosis, or Green Sickness, is a state of the habit which seems to depend on an impaired condition of the blood itself. Its treatment is well understood, and recourse to medical advice should never be neglected; otherwise it may terminate either in mental derangement or in sudden death. In convalescence from it, the diet should be mild and light, but nutritious; the exercise should be much within the limits of fatigue, and consist of both walking and horse exercise, daily, in the open air; the body, more especially the lower extremities, should be warmly clothed; the mind ought to be amused; all sedentary occupations thrown aside; and confidence placed in the honor of the physician, who should be made the repository of any mental anxiety, especially connected with the tender passion, which may be preying upon the vital energy of the body.

Affections of the Head.

WHATEVER may be the cause of *Apoplexy*, no disease requires more prompt and energetic treatment: the alarming nature of the symptoms is always sufficient to prevent any time from being lost by attempts to relieve the sufferer without medical assistance. Should the attack not prove fatal at the time, and should it not be followed by palsy, still the utmost caution is requisite to prevent a recurrence of the disease. It is scarcely necessary to insist on the strictest adherence to temperance, both as to meat and to drink; and the importance of daily exercise, when the attack is over, and indeed for the remainder of life. Prolonged study and intense thinking must be given up; the violent and exciting passions should be subdued; and even the pleasurable moderated.

Inflammation of the brain is one of those diseases which require, as observed respecting apoplexy, the most energetic treatment. When convalescence has fortunately been established, the attention of the physician is still requisite, during several weeks, until complete recovery be fully confirmed; for the brain, after suffering from inflammation, is very apt to relapse into the same state, from the excitement of too full a meal, or over-exercise, or even slight mental exertions or emotions. On this account, the convalescent must be kept perfectly quiet, and completely free from the smallest excitement, and the strictest regimen observed. His diet should not only be mild and unstimulating, but small in quantity.

Inflammation of the eyes requires the same caution when convalescence is secured as other inflammatory affections; namely, quiet, great moderation in diet, and avoiding exposure either to much light, heat or cold, or whatever can stimulate the still highly excitable organ.

Affections of the Chest.

Inflammation of the Lungs (*Pneumonia*). — In convalescence from this disease, the temperature of the room in which the patient sits should not exceed 60° F.; and it should be free from currents of air; but at the same time it should not be close. The necessity for continuing the same elevated position of the shoulders when in bed, which is demanded during the existence of the disease, remains even when the convalescence is advanced. The patient should be prevented from talking, and from exerting any muscular motion that can accelerate the circulation. The diet should be of that description which will support the strength without exciting or producing repletion. As the convalescence advances, and exercise is permitted by the medical attendant, it should be regular, but not hurried nor violent; and evening air should be sedulously avoided.

Pleurisy. — Inflammation of the lining membrane of the chest requires the same attention to diet and regimen during convalescence as the last-mentioned disease, except that a greater strictness with regard to abstemiousness in food is requisite; the least deviation being likely to bring on a renewal of the inflammation. When the disease assumes a chronic character, and when the object is to remove fluid effused into the cavity of the chest, and pressing upon the lungs so as to circumscribe their action, the same degree of strictness with respect to diet is not necessary; but, as in this condition of the habit the physician must continue his attendance, the regulation of the diet devolves upon him.

Angina. — In that condition of the habit which is connected with a predisposition to gout, but in which, instead of a regular paroxysm, the heart and the pulmonary organs become affected, and the disease assumes that form which has been denominated diaphragmatic gout (*Angina pectoris*), the regulation of diet is of vital importance; and it should be of as low a standard as the constitutional powers will admit. It should not be of a description either to nourish much, or to augment or to cause fullness of habit; mild animal food, in moderate quantity, may be allowed; but the staple should be of a farinaceous kind: every stimulant, whether solid or fluid, should be avoided; and wine and malt liquors regarded as poisons. The invalid himself should be made aware that whatever tends to excite or to hurry the circulation is calculated to bring on a paroxysm; nor is it sufficient that he avoids all stimulating viands and beverages; he should also be instructed that the same deleterious effects are likely to follow a full meal, even of the most proper and mildest food.

The same attention to diet, both as regards quantity and quality, is essential in *palpitations* depending upon organic disease of the heart.

Asthma. — In no affection of the chest is attention to diet so important as in *asthma*. Sir John Floyer, who himself suffered from the disease, recommends almost a degree of abstinence; which is correct in reference to quantity; but the diet, although of a light, yet should be of a solid, kind. This is especially necessary when dyspepsia is present to aggravate and excite the disease of the lungs.

In Whooping-cough, the diet, whether the patient be an adult or a child, should be of the mildest description; and perhaps no nutriment is so well adapted to support the tone of the body, without exciting it, as milk. In infancy, nothing but the breast should be given; the system of the nurse, at the same time, being kept as cool as possible by mild diet, and her mind in a tranquil state. If convulsions occur, these sometimes depend on the nature of the milk: in which case the nurse should be changed. It is still customary with non-professional persons to consider change of air essential in whooping-cough; but it is only after the malady has run its course, and convalescence is progressing, when the cough remains as a habit, that change of air is really beneficial. It is unnecessary to combat the absurd opinion, that a change even to a worse air is salutary.

Affections of the Stomach and Bowels.

ALTHOUGH *acute inflammation of the stomach* rarely occurs, yet there is a chronic form of that disease, in which, during its actual existence, and also in convalescence from it, much of the safety of the invalid depends upon domestic management. Every source of excitement should be avoided; the sick-room should be airy, and its temperature that of summer. The food should be of the blandest kind, given cold, or iced, and in small quantity: even when the convalescence is established the diet should consist of farinaceous matters, mixed with small quantities of beef-tea, or weak broths; and this severe diet should be persisted in for a considerable time after recovery.

Enteritis. — When inflammatory action extends to, or exclusively exists in, the mucous lining of the bowels, constituting this disease, the diet, during the early stage of it, should be confined to cold water, or iced almond-emulsion; after which, milk and barley-water, or weak chicken or veal-tea, may be given in small quantities; namely, two or three tablespoonfuls, at intervals of three or four hours. Nothing stronger should be ventured upon, unless expressly ordered by the medical attendant.

Atonic dyspepsia, or *simple indigestion.* — During the attack, abstinence, to a certain degree, is necessary; but, if this is not essential, the diet should be somewhat stimulant, but simple; namely, a small cup of moderately strong coffee, with little sugar or milk; or beef-tea, with a small quantity of dry toast; and, as the stomach begins to regain its tone, a little animal food of easy digestion, such as mutton or poultry.

During the intervals of the paroxysms of indigestion, attention to diet is of the first importance. As a general rule, the patient should be confined to a spare animal diet, with a moderate share of *well-boiled* vegetables, and a considerable restriction with respect to the use of fluids.

Dysentery, which implies inflammation, acute or chronic, of the same membrane as in *enteritis*, but confined to the larger and lower bowels, requires the diet to consist of the mildest farinaceous matters, strictly avoiding all solid animal food. It should be given in small quantity at a time, and the whole allowance for the day should be moderate. The farinaceous food should not be either solid, nor yet altogether fluid; the former may prove injurious as a mechanical irritant; the latter is liable to excite griping, from the extrication of much flatus.

Diarrhœa. — Much of the domestic, as well as the medical management of diarrhœa depends on the nature of the attack, and its causes; but too much attention cannot be paid to the regulation of the diet. It should be both small in quantity, and mild in quality. In the early stage, and the acute form of the disease, barley-water, arrow-root made with water, rice or grit-gruel, and light broths, are proper. In chronic diarrhœa, rice, properly boiled, and mixed with a small quantity of beef-tea, forms an excellent diet, as it nourishes moderately, and leaves scarcely any feculent matter behind it.

In Cholera, convalescence is often tedious; and nothing is so likely to cause relapse as even slight irregularities of diet. For weeks after the feverish symptoms have disappeared, the diet should consist of a very moderate quantity of vegetable matter only. The feet should be kept especially warm and the whole body clothed in flannel, to prevent that irregular distribution of blood which so strongly characterizes the disease.

After inflammation of the lining membrane of the cavity of the belly (*peritonitis*) has been subdued, the invalid should still observe the strictest diet and regimen. He should return very gradually to the use of animal food and wine. The bowels should be moderately and daily opened, the feet kept warm, and the skin maintained in a healthy condition by wearing flannel next to it, for a very considerable time after every trace of the disease has disappeared.

Diseases of the Liver. — In all cases of recovery from these diseases, whether inflammatory or otherwise, every precaution should be taken to guard against the deleterious influence of alternations of temperature, and also of damp, by clothing in flannel next the skin. Errors in diet should be avoided; and fermented liquors and stimulating beverages of every kind refrained from. When pains of the side continue, after all the other symptoms of the disease have disappeared, the introduction of a seton, if prescribed, should not be objected to; as the greatest benefit has often followed that mode of counter irritation.

ART AND SCIENCE OF COOKING FOR THE SICK-ROOM

Giving full and practical instruction for every kind of diet
and cooking for the patient, whether in
disease or convalescent.

COOKERY FOR THE SICK-ROOM.

It was said by the distinguished Dr. Rush, in his lectures before his class, that a physician ought to spend six months in a kitchen before beginning practice. A knowledge of dietetic preparations fitted for the sick, and for those recovering from disease, however apparently unimportant, adds much to a physician's power over his patient, and to his popularity and usefulness.

In giving nourishment to the sick, who are suffering from low diseases, it is an important rule which should never be forgotten, *to give but little at a time, and to repeat that often.* In cases of great prostration from disease, life may at times be endangered by a delay in giving nourishment of even a few minutes beyond the proper time.

Barley-Water.

Pearl barley, two ounces; boiling water, two quarts. Boil to one-half, and strain. A little lemon-juice and sugar may be added, if desirable. To be taken freely in inflammatory diseases.

Rice-Water.

Rice, two ounces; water, two quarts. Boil an hour and a half, and add sugar and nutmeg.

Rice, when boiled for a considerable time, becomes a kind of jelly, and, mixed with milk, is a very excellent diet for children. It has in some measure a constipating property, which may be increased by boiling the milk.

Decoction of Bran.

New wheat bran, one pint; water, three quarts. Boil down one-third, strain off the liquor, and add sugar, honey, or molasses, according to the taste of the patient. A bran tea may be made by using boiling water, and suffering the mixture to stand in a covered vessel for three or four hours.

Sage Tea.

DRIED leaves of sage, half an ounce; boiling water, one quart. Infuse for half an hour, and strain. Add sugar and lemon-juice as required by the patient. Balm and other teas are made in the same manner.

The above infusions form agreeable and useful drinks in fevers, and their diaphoretic powers may be increased by adding a little sweet spirits of nitre.

Barley Coffee.

ROAST one pint of common barley in the same way in which coffee is roasted. Add two large spoonfuls of this to a quart of boiling water; boil five minutes. Add a little sugar.

Lemon-Water.

PUT two slices of lemon, thinly pared, into a teapot, a little bit of the peel and a bit of sugar. Pour in a pint of boiling water, and cover it close two hours.

A Refreshing Drink in Fevers.

PUT a little sage, two sprigs of balm, and a little sorrel into a stone jug, having first washed and dried them. Peel thin a small lemon, slice it, and put in with a small piece of the peel; then pour in three pints of boiling water. Sweeten, and cover it close.

Another.

BOIL an ounce and a half of tamarinds, three ounces of cranberries, and two ounces of stoned raisins, in three pints of water, till the water is reduced to two pints. Strain, and add a bit of lemon-peel, which must be removed in an hour, as it gives a bitter taste if left too long.

A Very Pleasant Drink.

PUT a teacupful of cranberries into a cup of water, and mash them. In the meantime, boil two quarts of water with one large spoonful of corn or oatmeal and a bit of lemon-peel; then add the cranberries, as much fine sugar as shall leave a smart flavor of the fruit, and a wineglassful of sherry. Boil the whole gently for fifteen minutes, and strain.

Crust Coffee.

TOAST slowly one or two slices of brown or white bread, pour boiling water over it, and drink hot or cold, according to preference.

Infusion of Malt.

To one pint of ground malt add three pints of scalding water, that is, water not quite brought to the boiling point; infuse two hours, and strain. Add sugar or lemon juice as desired. An excellent preparation in inflammatory fevers.

Lemonade.

Fresh lemon-juice, four ounces; thin peel of lemon, half an ounce; white sugar, four ounces; boiling water, three pints. Let them stand until cold, and strain. When used in fevers, a little nitrate of potash or sweet spirits of nitre may be added. It may be further diluted to the taste of the patient.

Water Gruel.

Oat or corn meal, two tablespoonfuls; water, one quart. Boil for ten or fifteen minutes, and strain, adding salt, and sugar if desired by the patient.

Milk for Infants.

Cows' milk, one part; water, two parts; sweeten slightly with loaf sugar.

It is necessary, when children are to be raised by hand, to dilute the milk. The above proportions may be altered as the child advances in age.

Rice Gruel.

Ground rice, one heaping tablespoonful; ground cinnamon, one teaspoonful; water, one quart. Boil gently for twenty minutes, adding the cinnamon near the conclusion. Strain and sweeten. Wine may be added in some cases.

Panada.

White bread, one ounce; ground cinnamon, one teaspoonful; water, one pint. Boil them until well mixed, and add a little sugar and nutmeg. Wine or butter may also be added, if desirable.

Compound Salep Powders.

Salep, tragacanth, and sago, each four ounces; cochineal, half a dram; prepared oyster shells, one ounce. Mix, and divide into powders of one dram each. Stir one of these powders into a pint of milk, and boil for ten or fifteen minutes. To be drunk freely in diarrhœa and dysentery.

Another.

Gum arabic, tragacanth, maranta, sago, tapioca, each two drams. Mix them well together, and boil in a pint of milk, flavored with nutmeg or cinnamon. To be used as a diet in dysentery, diarrhœa, etc.

Sago Gruel.

Sago, two tablespoonfuls; water, one pint. Boil gently until it thickens, frequently stirring. Wine, sugar, and nutmeg, may be added, according to circumstances.

Arrow-Root Gruel.

Arrow-root, one tablespoonful; sweet milk, half a pint; boiling water, half a pint. To be sweetened with loaf sugar. Excellent aliment for children when the bowels are irritable.

Tapioca Jelly.

Tapioca, two tablespoonfuls; water, one pint. Boil gently for an hour, or until it assumes a jelly-like appearance. Add sugar, wine, and nutmeg, with lemon-juice to suit the taste of the patient, and the nature of the case.

Jelly of Irish Moss.

Irish moss, half an ounce; fresh milk, a pint and a half. Boil down to a pint. Remove any sediment by straining, and add the proper quantity of sugar and lemon juice, or peach-water, to give it an agreeable flavor.

Isinglass Jelly.

Isinglass, one roll. Boil in one pint of water until it is dissolved. Strain, and add one pint of sweet milk. Put it again over the fire, and let it just boil up. Sweeten with loaf-sugar, and grate nutmeg upon it. When properly made, it resembles custard.

This forms an excellent diet for persons recovering from sickness, and is well adapted to the bowel-complaints of children.

Apple Water.

Cut two large apples in slices, and pour a quart of boiling water on them. Or, pour the same amount of water on roasted apples. In two or three hours, strain and sweeten slightly.

Milk-Porridge.

Wheat flour, cornmeal, or oatmeal, two tablespoonfuls; milk, one pint; water, one pint. Mix the flour or meal with cold water, to form a thin paste; put the milk and water over the fire, and when they come to the boiling point, add the paste, carefully stirring.

French Milk-Porridge.

Stir some oatmeal and water together; let the mixture stand to clear, and pour off the water. Then put more water to the meal, stir it well, and let it stand till the next day. Strain through a fine sieve, and boil the water, adding milk while so doing. The proportion of water must be small. With toast, this is a good preparation for weak persons.

Ground-Rice Milk.

Boil one spoonful of good rice, rubbed down smooth, with a pint and a half of milk, a little cinnamon, lemon peel, and nutmeg. Sweeten when nearly done.

Boiled Flour.

Tie up as tight as possible, in a linen cloth, one pound of flour; and, after frequently dipping it in cold water, dredge the outside with flour till a crust is formed round it, which will prevent the water from soaking into it while boiling. Place it in water and boil it until it becomes a hard, dry mass.

Two or three spoonfuls of this may be grated, and prepared in the same manner as arrow-root gruel, for which it is an excellent substitute.

Vegetable Soup.

Take one turnip, one potato, and one onion, let them be sliced and boiled in one quart of water for an hour. Add as much salt as is agreeable, and pour the whole upon a piece of dry toast.

This forms an agreeable substitute for animal food, and may be given when the latter is inadmissible.

Beef-Tea.

Lean beef, cut into shreds, one pound; water, one quart. Boil for twenty minutes, taking off the scum as it rises. When it grows cold, strain.

Essence of Beef.

Lean beef sliced. Put a sufficient quantity into a porter-bottle to fill up its body, cork it *loosely*, and place it in a pot of cold water, attaching the neck, by means of a string, to the handle of the vessel. Boil this for an hour and a half or two hours; then pour off the liquor and skim it.

To this preparation may be added spices, salt, wine, brandy, etc., according to the taste of the patient, and nature of the disease.

Calf's-feet Jelly.

TAKE two calf's feet, and add to them one gallon of water. Boil down to one quart. Strain, and when cold, skim off the fat. Add to this the white of six or eight eggs well beaten, a pint of wine, half a pound of loaf sugar, and the juice of four lemons, and let them be well mixed. Boil the whole for a few minutes, stirring constantly, and then pass it through a flannel strainer.

This forms a very nutritious article of diet for the sick, and for those recovering from disease. The wine may be omitted or added according to choice.

Chicken Water.

TAKE half a chicken, divested of all fat, and break the bones; add to this half a gallon of water, and boil for half an hour. Season with salt.

Suet Ptisan.

SHEEP'S suet, two ounces; milk, one pint; starch, half an ounce. Boil slowly for half an hour. This may be used as a common drink in dysentery.

Rennet Whey.

NEW milk, one quart; rennet, a large spoonful. Heat the milk, and then add the rennet. Boil until the curd separates, which is to be taken off. To many persons, this forms an agreeable nutriment.

Vinegar Whey.

MILK, one pint; vinegar, one tablespoonful. Boil for a few minutes, and separate the curd.

Tartar Whey.

MILK, one quart; cream of tartar, one dessert spoonful. Boil, and separate the curd.

Mustard Whey.

BRUISED mustard-seed, one tablespoonful; milk, one pint. Boil together for a few minutes, and separate the curd.

This has been found a useful drink in dropsy. A teacupful may be taken at a time.

Alum Whey.

Alum, one teaspoonful; milk, one pint. Boil together, and strain, to separate the curd.

Orange Whey.

Milk, one pint; the juice of an orange with a portion of the peel. Boil the milk; then put the orange to it, and let it stand till coagulation takes place. Strain.

Sweet Whey.

Skimmed milk, two quarts; a piece of prepared calf's rennet. Mix and put in a warm place till coagulation takes place; then strain.

Whey with Tamarinds.

Milk, boiling, one pint; tamarinds, two ounces. Boil them together till coagulation takes place.

Wine Whey.

Milk, two thirds of a pint; water, one third of a pint; Madeira, or other wine, one gill; sugar, one dessert spoonful. Place the milk and water together in a deep pan on the fire, and at the moment when it begins to boil, pour in the wine and the sugar, stirring assiduously whilst it boils, for twelve or fifteen minutes. Lastly, strain through a sieve. This is excellent in all forms of fever, given in small quantities. It may be drunk either cold or tepid, a wineglassful at a time.

Milk and Soda Water.

Heat nearly to boiling a teacupful of milk; dissolve in it a teaspoonful of refined sugar; put this into a large tumbler and fill with soda water. This is an excellent mode of taking milk when the stomach is charged with acid, and is oppressed by milk alone.

Sippets.

On an extremely hot plate, put two or three slices of bread, and pour over them some of the juices of boiled beef, mutton, or veal. If there be no butter in the dish, sprinkle over them a little salt.

Restorative.

Take two calf's feet, one quart of water, and one quart of new milk; place all in a close-covered jar, and bake three hours and a half. When cold, remove the fat. Any desired flavor may be given, by adding lemon-peel, cinnamon or mace, while baking. Add sugar afterwards.

Coffee-Milk.

Boil a dessertspoonful of ground coffee in nearly a pint of milk, for a quarter of an hour, then put into it a shaving of isinglass, and clear it. Let it boil a few minutes, and set it beside the fire to clarify. Sweeten with loaf-sugar.

Nutritive Fluid.

Take two teaspoonfuls of lump magnesia, one teaspoonful of saleratus, one teaspoonful of salt, two teaspoonfuls of flour, half a pint of milk, and one pint of water. Put the milk and water, united, over the fire, and rub up the flour with a little cold water to make a thin paste. Just when the milk and water begin to boil, stir in the paste. This will make a thin porridge, which should boil about five minutes. At the end of this time remove from the fire and pour into a pitcher. Now add the magnesia, pulverized, and mixed with the saleratus and salt. Sweeten to suit the taste.

This may be drunk freely, several times a day, so as to produce two evacuations of the bowels in twenty-four hours, in those cases of dyspepsia attended by acidity of the stomach, and in many debilitated conditions of the system in which there is a tendency to loss of flesh.

This is one of the leading fluids used by those who pursue what is called the "*Nutritive System*" of treating disease, and is really a valuable preparation, having the effect often to increase the flesh, even while it acts as a cathartic.

Franklin Mills Bread,

OR GERM-WHEAT BREAD.

One quart milk or water; one quart white flour; one-half yeast-cake; one-half cup sugar; one-half teaspoon salt; one quart Franklin flour.

Put the white flour in the mixing-bowl, then add the milk and yeast gradually, until smooth. Cover; let it rise in the bowl a night. In the morning, if light, add sugar, salt and Franklin flour, a little at a time; then let it rise again until light. Fill the pan two-thirds full, and rise. Bake one hour.

Indian-Meal Gruel.

Two tablespoonfuls of cornmeal to one quart of boiling water; one teaspoonful of salt. Cook about thirty-five minutes. If too thick, thin with milk or cream.

Oatmeal Gruel.

Take one quart of boiling water, three tablespoonfuls of oatmeal, one-quarter teaspoon salt; cook two hours, strain and add milk or cream.

Flour Gruel.

Take two teaspoonfuls of white flour, one cup of boiling water, one-half teaspoonful of salt. Make a smooth paste of the flour and salt before adding to boiling water. Strain and thin with milk or cream.

Mutton Broth.

Boil one pound of juicy mutton in two cups of cold water. Cook slowly for half an hour; strain, and after it is cold, remove the fat, and serve with boiled rice. The rice should be boiled separately and added to the broth when it is warming.

Beef Tea.

Take one pound of round steak, remove the fat, and cut fine, and place the meat in a self-sealing jar without water; cover closely, heat gradually in a kettle of water, one hour, or until there is no color in the meat. Press with a spoon all the juices from the meat. Serve with salt.

Broiled Beef Essence.

Place one pound of round of steak in the broiler and broil until the juice begins to flow. Cut into fine pieces and squeeze the juice, using a lemon squeezer. Salt to taste.

Flaxseed Lemonade

Take two tablespoonfuls of whole flaxseed, and pour over it one pint of boiling water. Steep one hour and a half; add the juice of one lemon and sweeten to taste. Excellent for colds.

Clam Broth.

Wash the clams; put in kettle with enough water to cover; boil until shells open, and serve hot.

Egg-Nog.

Take one tablespoonful of sugar and the yolk of one egg, and beat together; add one-half cup of milk; beat the white separately, and mix in lightly; add brandy or wine. A little nutmeg is used to flavor.

Occupational Diseases.

BELOW will be found a complete chart of those occupations which are, in themselves, especially hazardous, or which expose workers in them to unusual risks from disease; together with a list of the diseases.

Some occupations offer opportunities for the contraction of more than one disease; and the same disease may be contracted during more than one occupation.

Everyone is not able to choose his daily occupation,—he inherits his work, so to speak, from parents; or he may be the victim of circumstances. But it behooves each one of us to select, as far as possible, such employment as will offer conditions best suited to health.

In this way only can the laborer hope to enter into the true enjoyment of his work.

DISEASES OF THE ALIMENTARY CANAL.

Occupation.	May Lead To.	Symptoms.	Treatment.
Workers in *Colors.*	Colic; Gout.	Characteristic.	See pages 355, 527.
Soldiers.	Acute Dysentery.	Characteristic.	See page 347.
Handlers of *Fresh Meat, Butchers,* etc.	Tape-worms.	Pieces in fæces.	See page 365.
Those requiring lifting, pulling, etc.	Hernia, — Inguinal or Femoral.	....	See page 638.

DISEASES OF THE SKIN.

Occupation.	May Lead To.	Symptoms.	Treatment.
Candy Makers.	Eczemas.	Abrasion of surface; dry or moist, scaly humor.	See page 166.
Dyers.	Erythema.	Red, inflamed surface.	See page 165.
Woodsmen.	Eczema from Poison Ivy, etc.	Blister-like eruption.	See page 1132.

DISEASES OF THE SKIN, *Continued.*

Occupation.	May Lead To.	Symptoms.	Treatment.
Typists.	(Sclerotic) Eczema.	Local, hard sores.	See page 166.
Platers and *Workers* in *Acids*, etc.	Hives.	White wheals; itching; and weeping.	See page 164.
Factory Workers.	Ecthyma.	....	See page 170.
Makers and Users of *Paint* and *Chemicals.*	Eczema.	Dry or moist, scaly humor.	See page 166.
Manufacturers of *Fireworks.*	Keloid Scars.	Hard gristle-like scar forming after burns by explosions.	Electricity.
Keepers of *Aviaries.*	Stings.	....	See page 1017. (Houseleek Herb.)

FEVERS.

Occupation.	May Lead To.	Symptoms.	Treatment.
Sailors and *Dwellers* in *Over-crowded Places* (i.e., *Jails, Almshouses, Tenements*); *Soldiers;* etc.; etc.	Contagious Fever; Jail Fever; Ship Fever.	Chills; fever; followed by eruption over body like measles.	Same as Typhoid, page 519.

SURGICAL.

Occupation.	May Lead To.	Symptoms.	Treatment.
Roofers, Houseworkers.	House-maids' Knee.	Pain, fever and swelling in knee-joint.	Same as Bunions, page 628.
Porters and *Carriers of all Kinds.*	Deformities of Spine.	Gradual development of round shoulders, humps, etc.	See page 640.
Horsemen & Women.	Ossification of leg-muscles; injuries to perineum; sterility.	Hard swellings on inside of legs. Painful micturition, etc.	Excission. Poultices and rest. See page 455.
Railroad Employees, — Conductors, Motormen, and *Brakemen.*	Lumbago; bladder troubles; constipation.	Pain in lumbar muscles. Those of cystitis.	See page 525. See page 368. See pages 144, 357.
Foot-ball and *base-ball Players.*	Sprains of Back and Limbs.	Local pain, etc.	See page 624.

SURGICAL, *Continued.*

Occupation.	May Lead To.	Symptoms.	Treatment.
Excessive Fatigue of *Muscles* or *Nerves.*	Diabetes Insipidus; muscular and articular rheumatism.	Characteristic symptoms; pain; swelling; heat muscle or joint.	See page 373. See page 526.
Workers in *Phosphorus.*	Necrosis.	Softening and decay of jaw-bone.	See page 626.

NERVOUS DISEASES.

Occupation.	May Lead To.	Symptoms.	Treatment.
Workers in *Lead; Arsenic; Barium; Antimony; Zinc; Cobalt; Copper; Mercury; Gold* and *Silver* (in combination with acids); *Tin; Manganese.*	Poisoning and in severe cases muscular weakness and paralysis. In the first 4 or 5 "Lead Palsy."	Intestinal inflammation; wrist drop; general neuritis or inflammation of the nerves; pains; muscular weakness; paralysis.	Massage; electricity; in severe cases fixation of limb in splints or casts; internally, Iodide of Potash (5 grains 3 times daily); Epsom salts (in Lead Poisoning); salicylic acid in 5-grain doses every 2 hours (for neuritis). Later tonics (strychnia $\frac{1}{100}$ grain 3 times daily). See pages 560–567.
Writers, Telegraphers, Violinists, Flutists, Clarionetists, Pianists, Needle workers, Smiths, Drivers, Milkers, Watchmakers, Photographers, Money-counters, Billiard players, Weavers, Turners, Dentists, Stampers, Pedestrians.	Professional Neurosis; Occupation Neurosis.	Muscular cramp at first; then local spasm of muscles involved; neuralgia; palsy; paralysis.	*Rest.* When occupation is resumed some other set of muscles must be trained to do the work. Massage and gymnastics of the muscles and nerves; electricity; liniments; hot and cold douches. Drugs not of much value.
Tunnel Diggers; Divers and *Workers* under *increased atmospheric pressure.*	Caisson Disease; Diver's Paralysis. Bends.	Occur *after* return to normal atmospheric pressure. Pain in lower extremities, joints, and stomach; nausea, vomiting; headache; dizziness; paralysis and coma.	When seen immediately patient should be returned to slight atmospheric pressure till symptoms disappear. Afterwards, rest and quiet; morphine if necessary; ergot (fluid extract, ʒss 3 times daily). Later treat as in Paralysis and Neuralgia. See pages 206 and 216.

DISEASES OF THE NERVOUS SYSTEM.

Occupation.	May Lead To.	Symptoms.	Treatment.
Artificers: *Writers; Bookkeepers; Secretaries,* etc.	Writers' Cramp; Ataxic loss of muscular control; weakness; Neuritis.	Trembling; pain; weakness.	Same as Wry-neck, page 642.

EYE DISEASES.

Occupation.	May Lead To.	Symptoms.	Treatment.
Iron-founders and *Steel-workers; Engineers* and *Firemen; Stone-breakers.*	Injuries to Eyeball from foreign body.	Characteristic. Feeling of foreign body in eye.	See page 1145. See page 1145.
Chauffeurs.	Paralysis; Spasm of accommodation muscles of Eye.	Blurred vision; far-sight or near-sight. Conjunctivitis.	See page 649. See page 643.

DISEASES OF THE RESPIRATORY ORGANS.

Industry.	May Lead to.	Symptoms.	Treatment.
Involving *Inhalation* of *Irritants,* — *Acids* (Nitric, Hydrochloric, Prussic, Hydrofluoric, Picric, etc.); *Gases* (Ammonia, Chlorine, Sulphur, Nitrous, Choke damp, Coal and Water Gas, those from Turpentine, Naphtha, Aniline; Alcohol, Sulphuretted Hydrogen, Formaldehyde, Pyridine).	Bronchial Catarrh; Intoxication; General Poisoning of the system.	Characteristic, — severity depending on length of time exposed.	See pages 285–287. See pages 192–197. See pages 560–567.

DISEASES OF THE RESPIRATORY ORGANS, *Continued.*

Industry.	May Lead To.	Symptoms.	Treatment.
Millers and *Grinders, Street-cleaners, Teamsters, Dirt Diggers, Cork-grinders, Button and Comb-makers.*	Grinders' Consumption.	Those of Cirrhosis or Hardening of the Lungs; Fibroid Phthisis (elasticity of lung tissue destroyed).	See page 259.
	Coryza.	Characteristic.	See page 156.
Muscular Exertion, combined with *Cold* and *Dampness.*	Pleurisy.	Characteristic.	See page 292.
Weavers, Miners, Hatters, Cigar-makers, Furriers.	Irritation and Inflammation of Lungs and Tubes.	Persistent cough.	See pages 285–287.
Public Speakers and *Singers.*	Laryngitis (acute or chronic catarrh of Larynx).	Hoarseness; more or less complete loss of voice	See page 241.
Aviators, Balloonists, and workers under *rarified atmospheric conditions.*	Collapse.	Shortness of breath; dizziness; fainting; rapid heart action; due to lack of oxygen.	Stimulation; same as for strangulation. See page 560 for after-treatment of drowning, and page 563.

Methods of Entry of Industrial Poisons into the System.

The methods by which industrial poisons may enter the body are three: (1) Through the mouth and digestive system; (2) through the respiratory system; (3) through the skin.

The admission of poisonous material through the digestive system follows usually through unwashed hands being brought into contact with the mouth in order to wipe away moisture from the lips, or because the food is touched with unclean hands or is allowed to lie open in contaminated workrooms. It must also be pointed out that poisonous gas, dust, or vapor may get into the mouth or nose, and falling upon the moist mucous membrane, be carried into the stomach with the saliva. Here it must be noted that only a few combinations of poisons are wholly insoluble, the most being easily soluble in water and especially so in the digestive fluids.

Methods of Combating Industrial Poisons.

The chief share in the prevention of industrial poisons falls to factory owners and managers of industries; in the first place, because upon them rests the responsibility of providing proper technical arrangements for the removal of gases, vapors, and dust, and proper precautionary measures to avert danger in filling, emptying, and transporting the substances above named; in the second place, because upon them lies likewise the responsibility for providing suitable washing facilities and shower baths, work clothes, respirators, protective helmets, and other similar effective aids, where the formation of dangerous gases and dust in the workroom can not be prevented. We must not, however, overlook the fact that the hygienic protection of labor by preventive industrial devices is often practicable only in large and heavily capitalized establishments. Thus the majority of workers in the smaller factories, and especially in the hand work industries, must remain dependent upon less effective regulations. It is important to note concerning the preceding considerations that the interests of the industry and of the worker are one, because, in general, the development of an industry depends upon the well-being of its employees, or at least the two are interdependent. The productivity of the employee conforms in general to the care which the employer has taken to protect his health. Accordingly we should wish that the management of the great chemical industry might present a model. It by no means proves to be such, however, even in isolated cases. Frequently workers become sick even in establishments that are well conducted hygienically, because of production by new methods, as a result of which new and unknown poisons develop. This danger might be avoided if, before the manufacture in large quantities, exhaustive experiments in regard to the physiological effects of all the yet unknown chemical constituents were made in a laboratory attached to the factory or in a public institution.

An important rôle in the prevention of industrial poisoning falls to the government factory inspectors in so far as the supervision and control of legal preventive measures are incumbent upon them. If, however, the work required of them is so great that there is danger of their visits to the factory being so far apart as to make the proprietor feel fairly safe from interference, their activity then needs supplementing through experienced workers who should be officially designated as assistants to the factory inspectors. For a number of industries the appointment of factory physicians is prescribed by law in Germany. It is their duty to make a physical examination of each new worker and to watch over the health of those exposed to danger by the industry. This very valuable provision yet needs development. Especially should the factory physician be made entirely independent of the factory owner, and he should receive a competence sufficient to enable him to study the relation between sickness and nature of employment, so that he might be placed in a situation of usefulness in prescribing rules of conduct.

It is true, however, that in many cases upon the conduct of the worker himself entirely depends his well-being. Any watchful observer daily will note cases in which workers are poisoned by their indifference to the threatening danger. The enlightenment of the worker must therefore play an important part in overcoming the risks of industrial poisoning. It is useless here to argue whether the worker's own watchfulness or factory regulation is the more important. Instruction must come to the worker from many channels. This could begin conveniently in the higher classes of the public schools in connection with the instruction in natural sciences. Instruction in the conduct necessary to prevent industrial poisons, such instruction to be given by experienced physicians, should be emphasized in the continuation schools and especially in the technical schools. Much may also be done through the press, by public lectures, popular pamphlets, concise circulars of instruction, as well as by foremen and bosses.

Doctor Sommerfeld considers that the essential progress along these lines must be made, however, by means of the continuation schools of the various industries. It is usually a fruitless attempt to dissuade an adult laborer from exposing himself in his customary manner to a danger with which he is familiar and hence for which he has contempt. The youthful mind, however, is susceptible to enthusiastic and energetic instruction. The teacher of health for these young workers must be familiar not only with the scientific aspects of his subject, but with the technical methods of the industry.

DIETING IN REGARD TO HEALTH.

How to Grow Fat.

It is often as annoying to many to be thin as it is in others to be fleshy. Here again the remedy consists in overcoming the natural or peculiar forces at work predisposing to the paucity of fat accumulation, and first of all to grow fat means for the thin person to grow lazy and good-natured. Worry, cares, much work and short hours for sleep, must be overcome. Clean skins, clean clothes, clean air and plenty of sunshine are the *sine qua non* for thin people to observe.

Little work, long hours of sleep, plenty of rich food well digested, a merry disposition, regular hours for meals, with naps between times are also requisite principles to observe for him who would grow fat.

Drink plenty of water, say one or two glasses of pure water on arising and again on retiring. Do not overload the stomach with water, but drink all it will comfortably stand. Ride in the open air often, enjoy the sunshine and fresh air, and bathe in cool water, especially sea-water when practicable.

It will be found much more difficult for some than for others to observe all these principles, and again much more difficult for some to benefit by them than others; yet everybody can add pounds to their present weight if only they will persevere in all these instructions.

Of the food necessary to avoid, the chief articles are acids, spices, and condiments generally.

Of those most productive of fat are the cereals and starchy food like potatoes, oatmeal, bread, puddings, etc. Again, fatty meats, cream, butter, and milk, chocolate, oils, etc., supply fat directly to the system. Sweets are also conducive to fat formation, like sugar, beets, custards, etc. Sweet wines and porter are likewise fattening.

It must be borne in mind, however, that these very classes of food are often the cause of indigestion, which makes people thin, hence a good appetite and a good digestion are prerequisites for this sort of a dietary. It is often a benefit for those with weak stomachs to eat a little six times a day, say a light breakfast, dinner, and supper, and a glass of milk in the middle of the forenoon and afternoon.

To Reduce Flesh.

CORPULENCE or obesity is generally more annoying to most people than the opposite extreme. It is, however, as natural for some people to be fat as it is for others to be thin.

To reduce flesh, however, is legitimate within certain limits. The functions of the body should not be interfered with nor weakened by any sort of treatment directed to the reduction of flesh. There have always been kept on the market for sale medicines whose sole aim is to render people thinner, but most of them are neither trustworthy nor safe.

Of new medicines the most reliable is *Phytolene*. The thyroid gland of the sheep, taken in five-grain doses on retiring, has quite recently been extolled as a reliable and harmless medicine against obesity. This medicine has been on the market for only a short time, but it is known to be perfectly harmless.

The use of a teaspoonful of phosphate of soda in a glassful of hot water on arising, and a like dose at bedtime if the bowels are not moved too much by the morning dose, is of great assistance if persevered with over several months or so. Together with the abstinence from sugars in any form and the avoidance of potatoes will cause a great reduction in flesh. Lately the writer in four months has caused a patient to reduce the weight from 185 pounds to 150 pounds without any other treatment. No drugs, unless the salt may be classed as one, were given and the comfort and health of the patient has been increased a great deal.

Corpulence.

ALL people are not formed in the same mould, some are as fat as others are lean. This is owing to a number of causes, namely: the easy digestion and absorption of food stuffs; easy dispositions coupled with easy work and nourishing food; the preponderance of fatty, sweet or starchy food in the diet list; a certain hereditary predisposition, etc., etc. The style of one's diet (starchy), and the natural tendency in some to put on fat, have probably more to do with corpulency than any other two factors. This condition oftentimes is so distressing as to amount to disease. The heart walls and sac become so infiltrated with fat as to impede the easy action of the heart-muscle, as to retard slow, deep respirations and render all exertions a labor. One may die quite suddenly of fatty heart. The condition at all events often calls for treatment.

To Reduce Flesh.

THE so-called Banting Treatment consists in the abstinence from all fats, sweets, and starchy food. Banting of England, after having tried all other procedures, very rationally invented this treatment. Whatever else may be tried, this plan of dieting stands pre-eminently in the foreground, and must be persisted in, either alone or as an adjuvant to other treatments.

The following general rules will serve as a guide in the selection of proper foods: —

Avoid starchy food, sugar and fat, milk, coarse cereals, pork or lard in all its forms.

Can eat: —

Of Soups: Mutton, chicken and clam broths, beef-tea.
Of Fish: All kinds except salt or fatty, like bluefish and mackerel.
Of Meats: The lean of mutton, beef or chicken in small quantities.
Of Vegetables: All kinds but potatoes, turnips and parsnips.
Eggs, bread, cornmeal, etc. All kinds of fruit and berries.

Weak coffee with little sugar or milk, light wines, and the various mineral waters. Poland, Vichy, Londonderry, Hunyadi, etc., can be taken.

Moderate gentle exercise is to be indulged in. The bowels are to be kept loose with some saline aperient each day, like Carlsbad salts.

Recently cases have been reported of marked success in the use of the extract of thyroid glands in tablet form; one each night, at the same time using Garfield Tea. Iodide of potash in ten-grain doses taken in one-half a glass of water three times daily, has been for a long time the favorite remedy in the treatment of this disease. This dose should be increased every third day till twenty grains are taken as a dose. If the mouth tastes very badly in the morning, or pimples on the face or back appear to any very annoying degree, the medicine may be discontinued for a short time, although these symptoms do no harm.

DIETING IN DISEASE.

In Dyspepsia, great care should be taken not to overload the stomach. It is better to eat often, and take smaller quantities at a time, and at regular intervals. Dyspepsia assumes so many different forms that experience should teach each patient what agrees with him best. Regularity is of importance, and in no case should a meal be eaten in a hurry or when the mind is disturbed. It is best to avoid pork in all forms, rich, fatty and highly-seasoned foods or liquors. Plain foods with few condiments are the best. A little warm water or milk taken with the food is better than tea or coffee. Vichy, Apollinaris, or Poland water are good drinks.

The following is usually a safe diet in ordinary dyspepsias:—Plain soups; oysters, raw or roasted; fish, except fatty varieties and blue-skinned fish. Fish should be boiled or broiled. Lobster, bluefish, mackerel and salmon, are the most difficult of digestion. Meats: mutton, roast or broiled; chicken, beef, sweet-breads, tripe. Eggs can generally be taken. The various vegetables, if well cooked,—with the exception of boiled potatoes. Only stale bread should be eaten. That made from the Franklin Mills flour is the best. The various coarse cereals are good. It is best to avoid puddings and pies. Fruits of different kinds are good, especially apples and grapes. It is beneficial in some cases to drink hot water immediately on rising, and in others cold water,—experience is the best teacher.

Dyspepsia accompanied by much gas and belching of wind is remedied oftentimes by avoidance of starchy food, such as bread, potatoes, etc. Dyspepsia of the small bowel, coming on one or two hours after meals, means less starchy food, and avoidance of heavy vegetables, fruits, cereals, etc.; in other words, the patient should live on an animal diet of meat, eggs, milk, etc.

For Consumptives, and those in an anæmic state, the diet should be generous and and easily digested; food should be taken in small quantities and often. It is best to take some light nourishment between meals and before retiring, such as Mellin's Food and milk, malted milk and egg-nog. In consumption, oils and fatty foods are beneficial if they can be digested. Various preparations of cod-liver oil are excellent. The patient should avoid pork in all forms, fried foods, pies and pastry, and all starchy or sweet foods.

Can take soups and broths, oysters, fish and eggs, if not fried, beef, poultry, game and mutton, — roasted or boiled; fresh vegetables; coarse cereals and stale bread. Desserts: baked apples, prunes, sago, tapioca and custards. Best to avoid strong tea or coffee. Vichy, Poland and ozonized waters, milk. Malted milk and koumiss are good drinks.

In Albuminuria.— Do not eat to excess, or overload the stomach in any way. Eat the most easily digested food, such as plain soups, codfish, haddock, clams and oysters raw. Of meats, chicken and game, avoiding those that have most blood in them. Vegetables of all kinds, especially those of green variety. Laxatives, coarse cereals and stale bread.

Do not take of pastry or rich dishes of any kind, sweets, coffee, tobacco or liquors. *Avoid* eggs and an excess of meats. *Can take* tea, milk, koumiss and large quantities of water, Poland if possible.

For Gouty and Rheumatic People a generous diet is best. They should *avoid* all foods that have a tendency to acidity of the stomach, such as those of a starchy or sweet nature.

Can take plain soups, broths, beef-tea, fish, — except fatty kinds, — and oysters; meats, with the exception of pork, in small quantities; fresh vegetables, — onions, cauliflower, celery, lettuce, spinach, peas and baked potatoes. Also various coarse foods and stale bread.

For desserts *avoid* all rich puddings and pastry and sweets. Can eat baked or stewed fruits, lemons, oranges and baked apples.

Should drink plenty of water and milk, rather than tea or coffee. Vichy, Poland and Lithia water are the best.

For Diabetes. — Take easily-digested food, avoiding as much as possible sweet and starchy varieties. Avoid the use of sugar altogether, and substitute saccharin, both in the preparation of foods and for tea and coffee. Use meats, fats, oils and butter, cream and water especially, say one pint of cream daily. Use few or no potatoes, and those baked. *May eat* all kinds of soup, and various shell-fish; fat meats and fresh vegetables that are not starchy. Various fruits, nuts, gluten bread, etc. Saja-bean meal contains only one per cent of starch, and is very well adapted to diabetes, — much better than the ordinary gluten flour, which, after all, is somewhat starchy.

For beverages: weak tea or coffee without cream or sugar, milk, koumiss, ales and various mineral waters. It is well to avoid flours, coarse cereals, fruits and vegetables.

BATHING,

WITH ESPECIAL REFERENCE TO THE TURKISH AND RUSSIAN BATHS AND THEIR USE AT HOME.

BATHING, as practised both for pleasure and cleanliness, has been the instinctive custom of every nation. Records date to the bathing in the Nile and Ganges. Jews, Greeks, Egyptians, and Assyrians were all lovers of the bath.

The Romans surpassed all others in the variety and luxury of their baths, but to an excess of them may be ascribed much of the final effeminacy and physical degeneration of the Roman people.

The Roman bather first entered the warm-air room or "tepidarium," where he sweated with his clothes on; here he was anointed, after which he passed into the "calidarium" or hot room, in one end of which was a bath; here he sweated more freely, and afterwards had plenty of cold water thrown over him from above his head: first warm, then tepid, and after, cold. Succeeding the bath, he was scraped and rubbed most briskly and again anointed. The popularity of these baths caused structures to be erected in every part of the city, and in a style of architecture which surpassed all other art buildings. The immensity of these buildings may be imagined from the fact that ruins of the baths of Titus and Caracalla extend one-fourth mile on each side, while one room of the bath of Diocletian has been converted into a church of imposing proportions. The baths of Diocletian contained 3,200 seats for bathers. To such a pitch of luxury did the Romans reach in their bath-houses, that Seneca said they were dissatisfied unless they trod on gems in their bath. These structures finally were also equipped for all literary pursuits, for sports and games.

These facts show how a simple custom of bathing became a national system of luxurious living. The Roman hour for bathing was one o'clock (before dinner), as it was supposed to promote the appetite, as it does. But these baths which gave such invigoration to the body, and which were synonyms of the highest art and culture, finally were one great means of Roman degeneracy.

To such excess did they carry their hot baths, that the nation finally exchanged its manly vigor for Eastern effeminacy. Unbounded license in social evils took the place of gymnastic training and philosophical study. I mention these facts at length to show how bathing may be a most healthful practice and a most injurious custom. Modern baths are more or less the outcome of the old Roman bath, through the agency of the Mahometans, Turks, Russians, and Crusaders. The Turkish bath is a modified Roman bath, while the Russian bath, so far as its vapor is concerned, was practiced among the Indians.

The Russian bath is essentially a vapor bath. In the centre of the building is an open space where one undresses. Around this space are doors opening into small rooms filled with vapor. In the centre of each room is a series of steps leading nearly to the ceiling. The bather lies on the lowest one of these steps and gradually ascends to higher and hotter ones. The first sensation is that of suffocation, the breathing is difficult, but soon perspiration bursts through the pores and breathing is easy and agreeable. These steps vary in heat from 96° to 110° F., and in olden times the temperature ranged very much higher than this. Bath attendants then flog the bather with birchen twigs or coarse towels, lather well with soap, and rinsing the latter off, the bather is rubbed down and put under a shower bath of ice-cold water. The shock is great, but the sensation is pleasant after a few moments. In olden times the bather was made to rush out, steaming hot, and roll in the snow. Milder customs, of course, prevail to-day, yet the Russian bath is not to be indulged in by all people at all times with impunity. When there is any tendency to heart disease, palpitation, vertigo, or fulness of the head, the vapor bath should be indulged in with caution or not at all.

The Turkish bath differs from the Russian bath in that the atmosphere is dry. The bather first enters the "frigidarium," or cooling room, where he undresses and passes into the " tepidarium," or warm room, the temperature of which ranges from 110° to 140° F. The object of this room is to bring on a gentle perspiration, and to prepare the system for exposure to a still higher temperature. This is attained in the "calidarium," the temperature of which varies from 140° to 200° F. In this room the bather undergoes the operation of kneading or shampooing. To get the full benefit of this bath this process should never be omitted; the hands alone being the sole means of friction. After sweating, shampooing, and soaping, the bather passes into the " lavatorium " or wash room. In this room he begins with a warm shower-bath, which is gradually changed to cool, and then to cold. This not only washes off perspiration and soap, but also closes the pores and causes a vigorous reaction.

The feeblest people react readily. The bather then returns to the cooling-room, where he lounges, wrapped in a sheet, to await the secondary perspiration.

The Turkish bath is one of the most invigorating and refreshing institutions we have. It is devoid of danger almost to all, if used in moderation. Very hot-air rooms, as well as very hot baths, are unnecessary and dangerous to many, as the heart begins to labor and the blood-vessels rapidly dilate.

Fear is often expressed about passing from the hot-air room to the cold-water bath. There is absolutely no danger in passing into cold water while in a state of profuse perspiration. Adverse changes are brought about through the nervous system of the skin; when this is elevated above the normal condition, cold water causes no shock; but when the power of the nervous system is depressed by being chilled, weary or by disease, then it is that ill results are apt to ensue.

Precautions must always be taken in indulging in any bath. Never take a bath on a hungry stomach, as did the Romans, nor immediately after meals, no more should a bath be taken when one is very weary or exhausted.

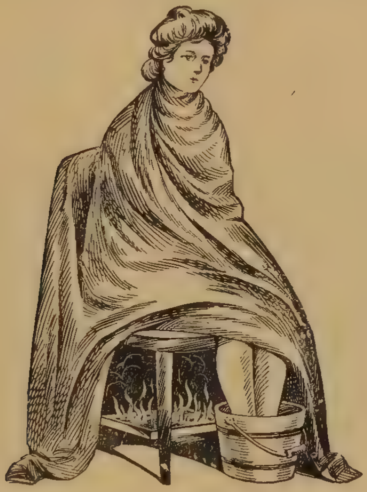


Fig. 195. Method of taking a Vapor Bath.

Warm baths simply relax and cleanse; but after all others, whether hot air, vapor, or sea bath, a good glow of the skin should follow.

Elderly people should use tepid baths and mild Turkish baths; cold bathing chills the skin and depresses the nervous system. Cold sponge-bathing is a useful adjunct to other health measures in the young and middle-aged, often being the best preventive against catching cold.

The duration of a bath may last from fifteen minutes to two hours. Too much bathing, especially with soap, deteriorates the skin by depriving it of its oily matters. The continued sweating of many water-cures causes bad eruptions and boils, which are difficult of cure. These "humors," so called by many hydropathists, are not evidences that bad blood thus escapes from the body, but that the system has been much debilitated by too frequent bathing, or too prolonged sweating. Parts exposed like the face and hands must be frequently scraped and bathed, while the rest of the body needs soap and bath much less frequently.

Sea-bathing should not be indulged in by the very old or young; by those whose circulation is languid; by persons who have head disease, chronic lung disorders, brain trouble or local congestions.

A full reaction and a good glow must ensue, and not much time spent in the water. Don't cool off before plunging in the water; all the body warmth is needed for a full reaction; no hesitancy should be harbored about plunging in at once, as less heat is thus lost from the body, and the consequent shock to the nervous system is thereby much diminished.

For home use both the Turkish and Russian bath may be much simplified.

The vapor for the Russian bath may be improvised as follows: The person sits on an open-work chair, preferably a stool made for the purpose, and is surrounded by a water-proof sheet fitting closely about the neck. Hot water is then poured over heated bricks placed underneath the chair. For more prolonged steaming, a hose may be run to the top of a boiler, on the stove, from whose tin cover projects a tin pipe, to which the hose may be attached. (Fig. 195.)

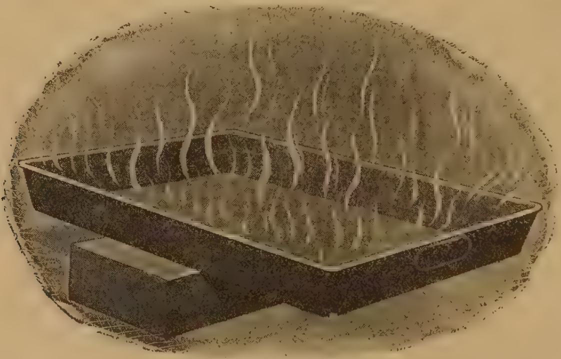


FIG. 196.

The shampooing and soaping and cold douche may then be taken.

For Turkish bath, hot air may be obtained by burning an alcohol-lamp under the chair and using the covering mentioned above, or alcohol may be mixed with salt in a pan. (Fig. 196.)

The shampooing and kneading of the muscles should be done by an assistant. Rubber tubing attached to the hot and cold-water faucets of the bath-room will readily furnish the requisite shower-bath of warm, tepid, and cold water, as one or both of the rubber tubings are used. The essential features of both baths may thus very easily be procured by almost every household.

PROOFS OF DEATH.

THE universal dread of being buried alive leads us to give an epitomized account of the various signs of death.

Absence of Circulation. — The heart cannot be heard pulsating by one trained to the proper use of the stethoscope. If a band be tied around a toe or finger no change results; but if the circulation still exists, after a few minutes a livid hue will be noticed at the end of the member.

Absence of Respiration. — A cold mirror placed against or close to the lips does not detect the presence of moisture. A flake of fine cotton or a feather similarly placed reveals no motion imparted by exhaled air.

Cooling of the Body. — After death the body temperature falls rapidly to that of the surrounding media. As a rule the corpse becomes cold in from six to twelve hours after death, the viscera, however, requiring much longer time.

Rigor Mortis. — Post-mortem rigidity is one of the most positive signs of death, and seldom occurs later than twenty-four hours after death.

Putrefaction is, of course, absolute proof of death, but it does not occur early. The abdomen becomes green, and finally the whole body assumes this livid green color, with a sickish, putrid odor. These are the chief signs of death, although several minor ones might be mentioned. It may be said in general, that burial almost never takes place until death is sure. The evidences of apparently suspended animation, of the body turning in its casket, etc., may be explained otherwise.

The Home Administration of Medicines.

⁂

We wish to make clear to our readers three most important facts:

First. That with due care and necessary information that this book will give, many ailments may be avoided without the use of medicines.

Second. That with a clear understanding of anatomy, hygiene, and symptoms of diseases, many things can be done for the relief of the patient until the arrival of the physician.

Third. That in a large majority of cases, with the knowledge that this book imparts, a physician's services will not be needed at all if the readers will make themselves thoroughly acquainted with the instructions given, and in a faithful and intelligent manner carry them out. But it must be borne in mind that in many cases the services of a physician are indispensable, and unless the reader, by following the symptoms here given, is able to correctly diagnose the ailment, and if a marked improvement is not noticed in the patient from the remedies given, no time should be lost in calling a physician.

Fourth. The instructions given in the chapter "The Domestic Management of the Sick Room," if followed carefully, will in most cases do away with the expense of a professional nurse.

FRUIT, VEGETABLES, PLANTS ROOTS and HERBS

HOW TO GATHER THEM
AND
THEIR MOST EFFECTUAL USE
IN MEDICINES AND THEIR
PREPARATIONS

CELERY (Apium Graveolens)

Beneficial in the Treatment of Chronic Rheumatism and Nervous Troubles.

Copyright J. A. B.

THE LEMON (Citrus Lemonum) from Sicily

Successful treatment for over thirty diseases

One of New York's leading physicians says:—"Lemons are one of the greatest blessings God has bestowed on mankind."

Copyright J. A. B.

TOMATO (Lycopersicum Esculentum)

Valuable remedy in Cholera Infantum

(See page 1098)

PUMPKIN SEEDS

For the tape-worm, no other remedy has yet shown itself as effectual as pumpkin seeds. The seeds should be well bruised, and steeped in water. This should be drunk freely for several days, if need be. It is believed to be a sure remedy, even in cases of several years' standing. The expulsion of a worm may be hastened by having a movement over a vessel in which a quart or so of boiling water has been placed, which will have a tendency to relax parts so that the worm will loosen his hold the more readily. The drinking of the decoction of pumpkin seeds should be followed after an interval of an hour or so by a good saline cathartic, such as one or two teaspoonfuls of epsom salts.

BEET REMEDY

Syrup made from the Garden Beet has been found very efficient and effective in the treatment for gravel and delayed menstruation, when the latter is caused by unnatural conditions, such as colds, etc. Beet syrup is prepared as follows: take young beets with their stalks and leaves, wash thoroughly and cut into small pieces. Place in kettle, covering with plenty of water. Cover the kettle and let them boil slowly for about one hour. When thoroughly cooked and soft, press with a wire potato-masher. Strain the liquid into another kettle. Place this on the stove over a slow fire and boil to consistency of a syrup.

Dose: One half to one teaspoonful of the syrup two or three times a day.

PREVENTION—To prevent amenorrhea, women should be careful and not expose themselves to cold or wet during the menstrual period. During the menstrual period sexual intercourse and violent emetics or purgatives should be avoided; thin shoes and stockings should not be worn, as they expose the feet and legs to the cold. These precautions must be strictly observed just before and during the menstrual period. By so doing chronic suppression of the menstrual flow can doubtless be avoided.

Copyright J. A. B.

PUMPKIN (Cucurbita Pepo)

Invaluable in treatment for Worms, especially the Tape Worm, also Inflammation of the Bowels and Bladder and retention of the Urine

(See page 1043)

Copyright J. A. B.

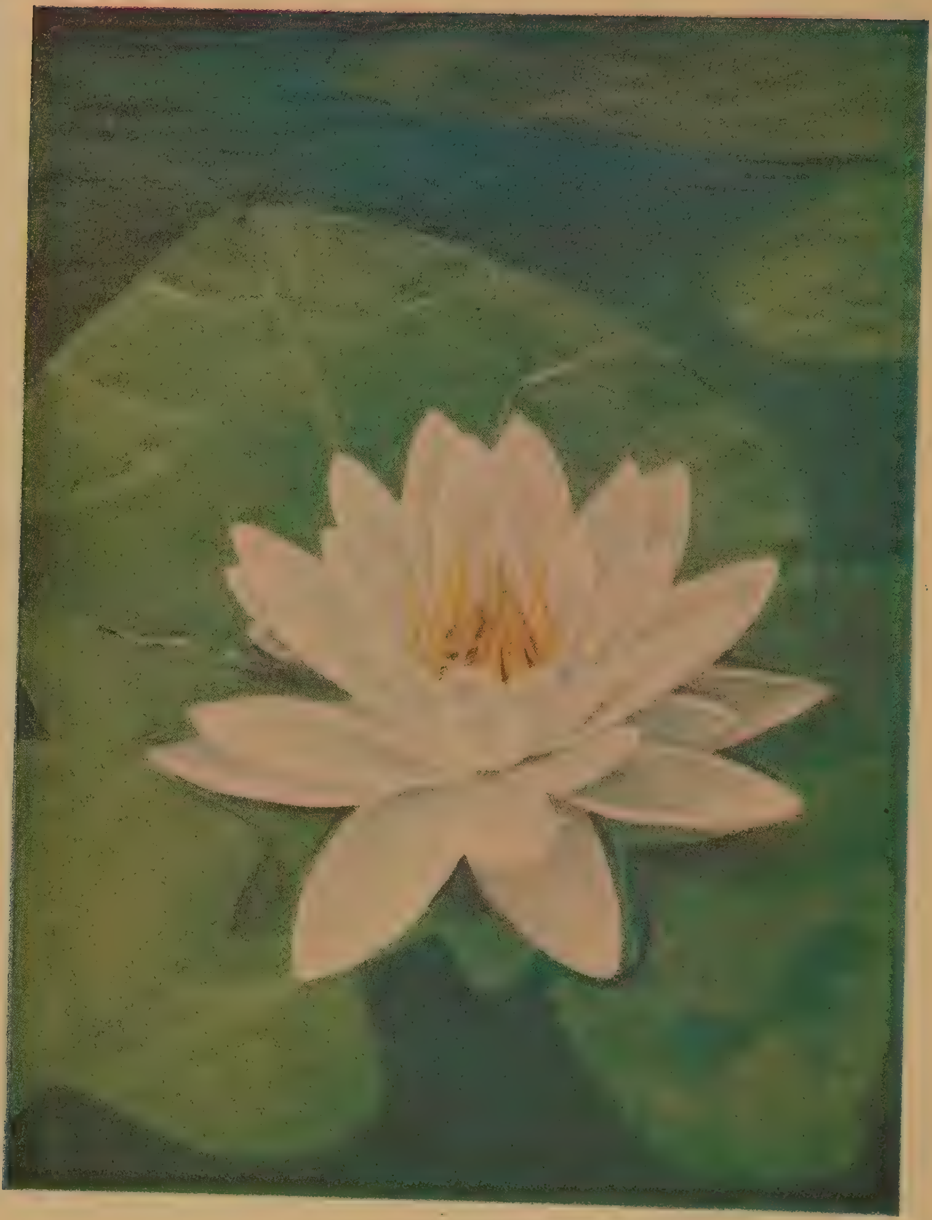
BEET (Beta Vulgaris)

Successfully used in suppressed or delayed Menstruation, also in Gravel
Also in cuts or wounds—Scrape raw Beet and bind over
wound fresh every hour
(See page 1134)

Copyright J. A. B.

CAYENNE (or Red) **PEPPER** (Capsicum Annuum)

Used in Scarlet Fever as a Gargle. As a tea in Grippe
or Severe Colds, also Dyspepsia
(See page 1001)



Copyright J. A. B.

WHITE POND LILY (Nymphoea Odorata)

Cure for Leucorrhoea. Also used for Chronic Diarrhoea

(See page 1059)

MEDICINES
AND
THEIR PREPARATIONS

Medicine is divided into three classes
ANIMAL, VEGETABLE and MINERAL
of which the "Vegetable Kingdom" furnishes
by far the most and best.

We give in the following chapters over
700 VARIETIES
of
HERBS, PLANTS AND ROOTS
How and where to gather them: their compound and use for
home treatment.

MEDICINES AND THEIR PREPARATIONS.

Materia Medica.

THAT department of medicine which treats of remedies, their doses, modes of using, and influence upon the constitution, is called materia medica. The agents employed in the treatment of disease are taken from three kingdoms of nature, — the vegetable, the animal, and the mineral.

The largest portion of medicinal substances are taken from the vegetable world. They consist of leaves, flowers, seeds, barks, and roots. These lose much or all of their medicinal powers unless gathered at the right seasons of the year, and are properly cured. The different parts of a plant are to be gathered when their peculiar juices are most abundant in them.

The Roots of Annual Plants are best supplied with their juices before they are in flower; they should be gathered at this time.

The Roots of Biennial Plants should be gathered in the autumn, after the first year's growth.

The Roots of Perennial Plants should be gathered in the spring, before vegetation has begun.

Before they are dried, the solid parts of these roots are to be cut in slices, after being washed, and the small fibres, unless they are the parts used, are to be thrown away.

Bulbous Roots are to be gathered at the time their leaves decay. Their outer covering being rejected, they must be sliced, strung upon threads, and hung in a warm, airy room to dry. After being dried, roots should be packed in barrels or boxes, and kept as free as possible from moisture.

Barks, whether of the roots, trunk, or branches, must be gathered in autumn, or early in the spring, when they peel off most easily, and, the dead outside and all rotten parts being separated, they must be dried in the same manner as roots. The most active barks are generally from young trees.

Leaves are to be gathered when they are full grown, and just before the fading of the flower.

Those of biennial plants are not to be collected until the second year. For drying, they should be thinly spread on the floor of a room through which a current of air passes. For preservation, they should be packed in vessels, and kept free from moisture and insects.

Flowers must generally be collected about the time of their opening, — either a little before or just after.

They should be dried as rapidly as possible, but not in the sun, and may be packed away in the same manner as leaves.

Fruits, Berries, etc., may be spread thinly upon the floor, or hung up in bunches to dry.

Articles to Accompany a Medicine-Chest.

It is advisable for families who prepare their own medicines to supply themselves with scales and graduated glasses, as the medicines in this book are prescribed in this way. Still, in many instances, measuring with spoons will answer.

The following articles should be kept in the medicine-chest: —

1. A spatula for mixing ointments and pills, and for spreading plasters.
2. A piece of smooth marble on which the above articles may be mixed, divided, and spread.
3. A glass funnel.
4. A domestic syringe for injection.
5. Adhesive or sticking plaster.
6. Lint.
7. Scales and weights.
8. A glass or wedgewood mortar and pestle.
9. A graduated wineglass for measuring teaspoonfuls and tablespoonfuls of liquids.
10. A graduated minim measure.
11. A two-ounce graduated measure.

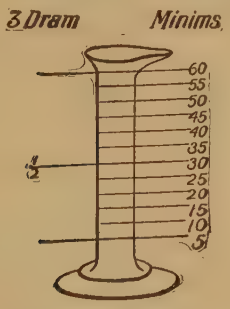


FIG. 195. MINIM MEASURE.

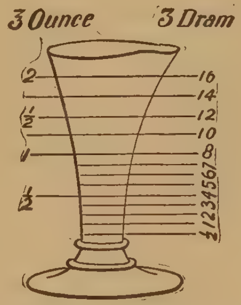


FIG. 196. TWO-OUNCE MEASURE.

The minim measure is represented by Fig. 195, and contains one fluid dram, or sixty minims, which is divided by twelve lines,— each line representing five minims. A minim is considered about equal to one and a half drops.

The two-ounce measure is represented by Fig. 196, and is divided off from half a dram upward.

Doses, Weights, etc.

APOTHECARY'S weights, by which all medicinal preparations ought to be weighed, are divided into pounds, ounces, scruples, drams, and grains.

The characters marked on weights and graduated measures are explained as follows:—

℥j	one ounce.	fʒj	one fluid dram.
f℥j	one fluid ounce.	ʒss	half a dram.
℥ss	half an ounce.	℈j	one scruple.
ʒj	one dram.	℈ss	half a scruple.

The grain weights are stamped with punch-marks.

20 grains make one scruple.
3 scruples make one dram.
8 drams make one ounce.

60 drops make one fluid dram.
8 drams make one fluid ounce.
16 ounces make one pint.

By apothecary's weight:—

℔ The pound is equal to 12 ounces.
℥ The ounce is equal to 8 drams.

ʒ The dram is equal to 3 scruples.
℈ The scruple is equal to 20 grains.

By apothecary's measure:—

O The pint is equal to sixteen ounces.
ʒ The dram is equal to ninety drops, or sixty minims.

The marks and words used by physicians and apothecaries may be a little more fully explained by the following table:—

℞ stands for *recipe*, and means *take.*
āā stand for *ana*, and mean *of each.*
℔ stands for *libra vel libræ*, and means a pound or pounds.
℥ stands for *uncia vel unciæ*, and means an ounce or ounces.
ʒ stands for *drachma vel drachmæ*, and means a dram or drams.
℈ stands for *scrupulus vel scrupuli*, and means a scruple or scruples.
O stands for *octarius vel octarii*, and means a pint or pints.
f℥ stands for *fluiduncia vel fluidunciæ*, and means a fluid ounce or fluid ounces.
fʒ stands for *fluidrachma vel fluidrachmæ*, and means a fluid dram or fluid drams.
m stands for *minimum vel minima*, and means a minim or minims.
Chart. stands for *chartula vel chartulæ*, and means a small paper or papers.
Coch. stands for *cochlear vel cochlearia*, and means a spoonful or spoonfuls.
Collyr. stands for *collyrium*, and means an eye-water.
Cong. stands for *conguis vel conguii*, and means a gallon or gallons.
Decoct. stands for *decoctum*, and means a decoction.
Ft. stands for *fiat* and means make.
Garg. stands for *gargarysma*, and means a gargle.
Gr. stands for *granum vel grana*, and means a grain or grains.
Gtt. stands for *gutta vel guttæ*, and means a drop or drops.

Haust. stands for *haustus*, and means a draught.
Infus. stands for *infusum*, and means an infusion.
M. stands for *misce*, and means mix.
Mass. stands for *massa*, and means a mass.
Mist. stands for *mistura*, and means a mixture.
Pil. stands for *pilula vel pilulæ*, and means a pill or pills.
Pulv. stands for *pulves vel pulveres*, and means a powder or powders.
Q. S. stands for *quantum sufficit*, and means a sufficient quantity.
S. stands for *signa*, and means write.
Ss. stands for *semis*, and means a half.

Domestic, or Approximate Measures. — A tablespoon contains about four drams; a teaspoon, one dram; a dessertspoon, three drams; a wineglass, two ounces. Spoons vary so much in size, that they should not be used as measures in giving powerful medicines.

Spoons can also be used for measuring solid substances, but are not as accurate, as the solid substances vary very much in weight, so that I would not advise their use in measuring powerful drugs.

One dram, or 60 grains, to a teaspoonful.
Four drams, or half an ounce, to a tablespoonful.

The spoon should be level full for solids.

The Approximate Value of French Decimal Weights.

One centigramme is equal to		¼ grain.
Two centigrammes	"	½ grain.
One demi-decigramme	"	1 grain.
One decigramme	"	2 grains.
One gramme	"	18 grains.
One gramme and three decigrammes is equal to		1 scruple.
Two grammes	"	½ dram.
Four grammes	"	1 dram.
One decagramme is equal to		2 drams and 36 grains.
Three decagrammes and two grammes is equal to		1 ounce.
Demi-kilogramme	"	1 pound.
Kilogramme	"	2 pounds.

The following table shows the relative doses for young people of different ages: —

The dose for a person of middle age being						1 or 1 dram.
That of	a person	from	14 to 21	years	will be	⅔ or 2 scruples.
"	"	"	7 to 14	"	"	½ or ½ dram.
"	"	"	4 to 7	"	"	⅓ or 1 scruple.
"	"	"	4	"	"	¼ or 15 grains.
"	"	"	3	"	"	⅙ or 10 grains.
"	"	"	2	"	"	⅛ or 8 grains.
"	"	"	1	"	"	$\frac{1}{12}$ or 5 grains.

In administering medicines, it is always well to begin with the smallest dose mentioned and gradually increase until the desired influence is produced.

The dose given should not only vary with the drug, but also with the condition, age and sex of the person.

In giving medicine to children, care should be taken as to the amount administered. (See foregoing table.)

It is of course necessary in all cases that the strength and condition of the patient should be taken into consideration. Especially where powerful drugs are used, it will be better to give smaller doses than mentioned in the table.

Tinctures.

THE preparations called tinctures are made by grinding or bruising the roots, leaves, or barks used, to a coarse powder, placing it in the proper amount of either alcohol or diluted alcohol, letting it stand from seven to fourteen days, — shaking each day, — and, finally, filtering through paper. A large proportion of tinctures are made by taking *one ounce* of the medicinal substance to *one pint* of the spirit; and whenever tinctures are spoken of in this Materia Medica, and the quantities are not named, the above proportions are to be presumed. When a larger proportion of the medicine is to be used, I shall simply indicate the proportions in the fewest words, as under Black Cohosh, — "this tincture, four ounces to the pint of alcohol," meaning thereby, that the tincture is made by using four ounces of the root to the pint of alcohol. Most fluid extracts have the same strength, ounce for ounce, with the roots, barks, leaves, etc., of which they are made. Tinctures may therefore be made with very little trouble, by substituting, in each case, the same number of ounces of their fluid extracts to the pint of alcohol, which I name of the gross substance, or, when no quantity is named, *one ounce* to the pint.

Infusions.

THESE doses are for adults : —

For young people	from	15 to 21,	give ⅔	of dose.
" children	"	7 to 15,	" ½	"
" infants,			⅓	"

In administering medicines of all kinds the strength and condition of the patient should be taken into consideration.

Infusions are solutions of vegetable medicines, generally obtained by pouring boiling water upon the substance, and letting it stand till it cools. When a more prolonged application of heat is desired, the vessel may stand for a while by the fire, but must not be permitted to boil. The vessel should usually be covered.

As in the case of tinctures, I have uniformly, while writing this Materia Medica, briefly named the quantity to be used to the pint whenever it *varies* from *one ounce*.

Acetic Acid. — This is a clear liquid, without color, and has a strong, sour taste, and an agreeable smell. When held to the nose, its fine, pungent odor often relieves headache. A piece of cambric wetted with it and applied to the skin, excites heat and redness, and, very soon, a blister, — for which this acid may be substituted in inflammatory sore throat, and other cases requiring speedy action. Applied to corns and warts, with a camel's-hair brush, it destroys them.

Citric Acid. — This acid is extracted from lemon or lime juice; it is also present in the cranberry, currant, strawberry, raspberry, tamarind, and is very abundant in the red elderberry. It is refrigerant and antiseptic, and is chiefly employed as a substitute for lemonade. Nine and a half drams of the crystals, two drops of oil of lemon, and one pint of water, answers a good purpose in place of lemon-juice.

Diluted Nitric Acid. — This, in the undiluted state, passes under the name of aqua-fortis. It is tonic and antiseptic. Largely diluted with water, it forms a good drink in fevers, especially typhus. Taken in large doses, it is a powerful poison. One-half dram of this preparation, thirteen ounces of soft water, and one ounce of simple syrup, make a good drink in fevers, of which half a wineglassful is a dose. Excellent in cases of whooping-cough. Use with care.

Nitro-Muriatic Acid. — This acid, when properly diluted, has a tonic and stimulant influence. It is much used as a foot-bath in affections of the liver, and in deficient secretions of the bile.

Diluted Hydrochloric Acid. — This is known by the name of diluted muriatic acid. It is tonic, antiseptic, and diuretic, and is used in typhus, eruptions of the skin, and with other articles, as a gargle in inflammatory and putrid sore throats. Dose, from five to twenty drops, in a wineglassful of water. It is given in scarlet and typhoid fevers, about ten drops being put into a bowl of barley-water or gruel.

Diluted Hydrocyanic Acid. — This is commonly known by the name of prussic acid. It is sedative and antispasmodic, and is useful in spasmodic coughs, asthma, whooping cough, nervous affections, hiccough, palpitation of the heart, irritable stomach, and dyspepsia. Dose, from two to five drops, in a glass of water or tea of Peruvian bark. It is an active poison, and should only be taken when prescribed by a physician.

Diluted Sulphuric Acid. — This acid, known by the name of diluted oil of vitriol, is tonic, antiseptic, refrigerant, and astringent. It is useful in dyspepsia, diabetes, menorrhagia, hæmoptysis, eruptions of the skin, hectic, and diarrhœa. It is often given with some bitter infusions, as cascarilla, colombo, Peruvian bark, or quassia. The aromatic sulphuric acid is often used in place of it, being sometimes considered more grateful to the taste. Dose of each, from five to ten drops.

Tannic Acid. — This is an astringent preparation, and passes under the name of tannin. It is prepared from galls. It is used in diarrhœa, dysentery, passive hemorrhages, and diabetes. Dose of the powder, from one to three grains.

Tartaric Acid. — This is refrigerant and antiseptic, and is used in inflammatory affections, fevers and scurvy. It is much used in preparing what is called lemon syrup, and forms an agreeable and healthful drink.

Alcohol. — Alcohol is the result of the fermentation of the juices of many vegetables. It is the intoxicating constituent in whiskey, rum, brandy, gin, wines, porter, ale, beer, and cider. Its principal use in medicine is in the preparation of tinctures, essences, and extracts. One part of pure alcohol to one part of water forms the diluted alcohol of the shops.

Almonds. — The *Amygdalus communis*, or almond tree, grows in the south of Europe and Asia, and yields the sweet and bitter almond. The oil of the sweet almond is used as a demulcent, in coughs, etc. A dose is a teaspoonful. The oil of the bitter almond is poisonous, and is occasionally used as a valuable sedative. Its taste is like that of a peach-kernel. Dose, one-quarter of a drop. It owes its poisonous properties to hydrocyanic acid. Cakes, etc., are sometimes flavored with an essence prepared from it. Do not confound the sweet with the bitter.

Aloes. — This is the hardened juice of the leaves of several species of the aloe-tree, in North and South Africa, in the south of Europe, and in the island of Socotra. Aloes is purgative, acting chiefly upon the rectum, or lower bowel, in which it frequently produces irritation, and is apt to aggravate and induce piles. It is much used to excite the flow of the menses, and should never be given to women during pregnancy. It produces griping of the bowels, which may be diminished by combining it with carbonate of potash.

Alum (*Alumen*). — The cheminal name of this is sulphate of alumina and potassa. In ordinary doses, alum is astringent and antispasmodic. In large doses, it is purgative and emetic, and is used both externally and internally. It is often used in solution as a gargle in sore throat, and falling down of the uvula, and as an injection in leucorrhœa. In doses of twenty or thirty grains, it acts as a purgative, and used in this way is useful in painter's colic. When exposed to heat in a vessel till it ceases to boil, it becomes dry, and is then called burnt alum, which, when pulverized, is applied with advantage to canker spots in the mouth, and to proud flesh.

American Hellebore (*Veratrum Viride*). — This plant grows in many parts of the United States, usually in swamps, wet meadows.

Arnica,
Burdock.

and on the banks of mountain streamlets. The root is the part used. It is slightly acrid, alterative in a marked degree, very decidedly and actively expectorant and diaphoretic, and it is an excellent nervine, though not narcotic. But its most marked and valuable quality — that in which it has no rival — is its sedative action upon the circulation. In suitable doses, it can be relied upon to bring the pulse down from a hundred and fifty beats in a minute to forty, or even to thirty. In fevers, therefore, in some diseases of the heart, in acute rheumatism, and in many other conditions which involve an excited state of the circulation, it is an article of exceedingly great value, because it is always reliable. Use under physician's directions only.

Preparations. — Veratum is used chiefly in the form of tincture, six ounces to the pint of diluted alcohol, or of fluid extract. The dose of each of these preparations, for a grown person, is two or three drops every hour or two, in a little sweetened water, and gradually increased, if necessary, till the pulse comes down to sixty or seventy. If taken in so large a dose as to produce vomiting, or too much depression, a dose of morphine or laudanum in a little brandy or ginger, is a complete antidote.

Veratrin, the active principle of veratrum, is also used, in doses of one-fourth to one-third of a grain.

American Ipecacuanha (*Euphorbia Ipecac*). — This plant is perennial and grows in sandy soils in the Middle and Southern States. When cut or broken it gives out a milky juice. The root is the medicinal part. It is emetic, cathartic, and diaphoretic. Dose, as a cathartic, eight or ten grains; as a diaphoretic, three or four grains, every three or four hours.

American Ivy (*Ampelopsis Quinquefolia*). — This vine grows in all parts of the United States. It is known by the names of *false grape* and *wild woodbine*. It is alterative, tonic, astringent, and expectorant. Used in scrofula and syphilis.

Water of Ammonia (*Liquor Ammoniæ*).— This preparation, called hartshorn, or spirits of hartshorn, is formed by the union of water with ammonia gas. It has a powerful ammoniacal odor, and an alkaline, caustic taste. Taken internally it is stimulant, sudorific, and antacid, and applied externally, it is rubefacient. It stimulates particularly the heart and arteries, without very much exciting the brain. It is an excellent remedy in heartburn, and for sick headache dependent on sourness of the stomach. A dose is from ten to twenty drops, largely diluted with water. United with oils, or with alcohol in about equal proportions, and applied externally, it reddens the skin, and, if the cloth wet with it be covered with oiled silk or with flannel, to prevent evaporation, it will sometimes quickly raise a blister. In cases of fainting, it is frequently applied to the nostrils, to excite the brain, and rouse the system. Aromatic spirit of ammonia is a better preparation.

Carbonate of Ammonia. — This is a white, moderately hard, crystalline salt, having a pungent, ammoniacal smell, and a sharp, penetrating taste. When exposed to the air, it loses some of its ammonia, becomes a bicarbonate, and falls to powder. It is stimulant, diaphoretic, antispasmodic, powerfully antacid, and, in large doses, emetic. Internally, it is more often used than water of ammonia, and for similar purposes. Coarsely bruised, and scented with oil of lavender, it constitutes the common smelling salts, so much used in fainting and hysterics. For internal use, the dose is from five to ten grains, taken in the form of pills, every two, three or four hours.

Muriate of Ammonia (*Sal Ammoniac.*) — This, also called hydrochlorate of ammonia, is a white, translucent, tough, fibrous salt, in large cakes, about two inches thick, convex on one side, and concave on the other.

It has a saline, pungent taste, but no smell, dissolves in one part of boiling water, and three parts of cold. Taken internally, it is stimulant and alterative. It is a valuable remedy in chronic bronchitis, pleurisy, and inflammation of the serous and mucous membranes generally. But it must only be used after the first violence of these inflammations has abated. Pulverized, and placed over a spirit lamp in a tin cup, the fumes which arise when it sublimes may be inhaled five or ten minutes, once or twice a day, with great advantage in chronic bronchitis, and in chronic inflammations generally of the air-passages. A solution composed of one ounce of the salt dissolved in nine fluid ounces of water and one of alcohol, may be used as a wash for bruises, indolent tumors, and ulcers.

Solution of Acetate of Ammonia (*Liquor Ammoniæ Acetatis*). — This is known by the common name of spirit of Mindererus. The taste is saline, and is like that of a mixture of nitre and sugar. It is a valuable diaphoretic, and is much employed, alone or mixed with sweet spirit of nitre, two parts to one, in fevers and inflammations. It is a valuable external application in mumps, applied hot upon a piece of flannel. One-half ounce mixed with seven ounces of rose-water and two drams of laudanum, forms a valuable wash for the eyes in chronic ophthalmia. The dose is from two to three drams mixed with sweetened water, every two or three hours.

Aromatic Spirit of Ammonia (*Spiritus Ammoniæ Aromaticus*). — Taken internally, this answers the same purpose as other preparations of ammonia, and is much used on account of it agreeable taste and smell. It is valuable as an antacid in sick headache. Dose, from twenty to thirty drops, sufficiently diluted with water.

Anise (*Pimpinella Anisum*). — This is a perennial plant, and grows in Egypt. Its fruit is called anise-seed. It is aromatic and carminative. It is much used to allay nausea, flatulency, and colic, particularly in children. It is frequently added to other medicines to make them more agreeable, and to lessen the griping effects of physic. The oil extracted from the seeds, dissolved in alcohol, an ounce of the former to a pint of the latter, forms what is called the essence of anise. Dose of the essence, from thirty drops to a dram in sweetened water. Anise forms a very valuable addition to cough preparations.

Arnica (*Arnica Montana.*)— This is a perennial plant, growing in moist, shady places in Siberia, etc. It is often called leopard's bane. It is much used externally as a stimulating application to bruises, local inflammation, etc.

Preparations. — It is chiefly used in the form of tincture, or fluid extract. Dose, ten to thirty drops. Half an ounce of tincture, five and a half ounces of boiling vinegar, and two drams of carbonate of ammonia, used warm, make in some cases a valuable fomentation. It is one of the leading homœopathic remedies.

Arrowroot. — This is prepared from the *Maranta arundinacea*, a plant of the West Indies. It is chiefly used in forming dietetic preparations, and belongs to the first or saccharine group of food-articles.

Assafoetida. — This is the hardened juice from the root of a Persian plant. It is stimulant, antispasmodic, and expectorant, and is much used in nervous complaints. A dose of the powder is from five to ten grains, and of the tincture, made by macerating two ounces in a pint of diluted alcohol, from thirty to sixty drops.

Balm (*Melissa Officinalis*). — This is a perennial plant, growing in Europe and this country. It is moderately stimulant and diaphoretic. The warm infusion causes perspiration, and is used to relieve painful menstruation.

Balm of Gilead (*Populus Candicans*). — This is a tree growing in the northern parts of our country. A tincture made from the buds, in doses of from one to four fluid drams, is useful in affections of the kidneys, in scurvy, and rheumatism. Steeped in lard they form a useful ointment for some purposes.

Balmony (*Chelone Glabra*). — This is a perennial plant, common to the United States. It is tonic, cathartic, and vermifuge. It is used in indigestion, debility, and derangements of the liver. A dose of the powdered leaves is one dram; of the tincture, two fluid drams; of the decoction, one or two fluid ounces; of the active principle called chelonin, one or two grains. A decoction of balmony combined with tincture of assafœtida forms a valuable injection for worms. An ointment made from the fresh leaves is valuable for piles, inflamed breasts, tumors, and painful ulcers.

Balsam Copaiba. — This is obtained from a South American tree called the *Copaifera Officinalis.* It is a clear yellowish fluid, about the consistency of honey. It is a stimulating diuretic, and is much used in chronic gonorrhœa, gleet, irritable conditions of the bladder, and chronic bronchitis. In some persons it causes an eruption on the skin, with itching, etc.

In large doses, it acts as a cathartic.

Balsam Tolu. — This is the juice of the tree *Myrospernum Toluiferum*, growing in South America. It is soft, tenacious, and of a pale brown color; and, like balsam copaiba, is soluble in alcohol, ether, and volatile oils. It has been used in asthma, cough, bronchitis, etc. Dose, from ten to thirty grains, in mucilage or syrup.

Barberry (*Berberis Vulgaris*). — This shrub grows along the Atlantic coast, from Canada to Virginia. The parts used are the bark and berries. It is tonic and laxative, and, in doses of a teaspoonful, powdered, is useful in jaundice, chronic diarrhœa, and chronic dysentery. A decoction of the berries forms an agreeable acid drink in fevers, cholera infantum, etc., and as a gargle it is useful for ulcers of the mouth, etc., as a wash, for chronic inflammation of the eyes, and as an injection for leucorrhœa.

Bayberry (*Myrica Cerifera*, Fig. 197). — This is found in damp places, in many parts of the United States, and is very abundant in New Jersey. The bark of the root is the part used. It is astringent and stimulant. Pulverized, and combined with powdered blood-root, it forms an excellent application to indolent ulcers. In the form of poultice, combined with powdered slippery elm, it is a useful application to scrofulous tumors or ulcers. The decoction is a good wash for sore mouth, and spongy, bleeding gums. It is chiefly used in the form of tincture, dose, half an ounce; fluid extract, dose, one or two drams; and the active principle, myricin, dose, two to ten grains.

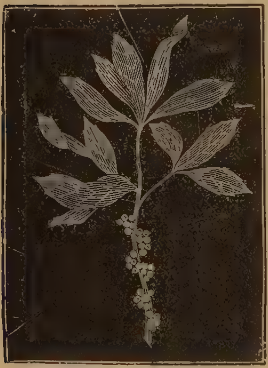


FIG. 197. BAYBERRY.

Bearberry (*Uva Ursi*, Fig. 198). — This plant, also called upland cranberry, has a wide range, being found in the northern parts of Asia, Europe and America. It flowers from June to September, and ripens its berries in the winter. The leaves are the only medicinal parts. It is astringent and tonic, and acts particularly upon the urinary organs, for complaints of which it is generally used. It is specially valued as an antilithic in gravel, and as a remedy for chronic inflammation of the kidneys, ulceration of the bladder, etc.

Preparations. — Fluid extract, dose, one-third of a dram to a dram; solid extract, dose, five to fifteen grains; tincture, dose, one to two ounces.

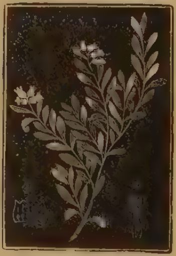


FIG. 198. BEARBERRY.

Beef's Galls (*Fel Bovinum*). — This being dried by evaporation, is sometimes used as a tonic and laxative, in torpor of the liver, jaundice, indigestion, and costiveness, in doses of from one to ten grains. Three drams of ox-gall, one dram of extract of conium, two drams of soda soap, and one ounce of sweet oil, make a valuable preparation, which, when applied externally, has a surprisingly rapid effect in reducing enlargement and hardening of the breasts, glandular tumors, particularly enlargement of the tonsils, and is useful in hypertrophies generally. For application to the tonsils, the gall may be rubbed up with water to the consistence of an ointment, and may be applied with a camel's-hair brush.

Benzoin. — This is the hardened juice of a tree of Sumatra and Borneo. It is very brittle, of a reddish brown color, and is soluble in alcohol and ether. It is chiefly used for inhalation in chronic laryngitis and bronchitis. When used for this purpose, it may be added to boiling water, and the vapor inhaled; or it may be burned upon coals or a hot shovel, the fumes being inhaled.

Benzoic Acid. — This is prepared by heating benzoin, and causing it to sublime. It consists of silky, feathery crystals, which are white and soft. It has been found useful in the phosphatic variety of gravel. A convenient way of giving it is to unite one part of it with four parts of phosphate of soda, the dose of which is from ten to twenty grains.

Bethroot (*Trillium Pendulum*). — A perennial plant, growing in rich soils, in the Middle and Western States. The root is used, and is astringent, tonic, and antiseptic. It is useful in bleeding from the lungs and kidneys; also in excessive menstruation, cough, asthma, and difficult breathing. Boiled in milk, it is used, in the western country in diarrhœa and dysentery.

Preparations. — Fluid extract, dose, one to three drams; trilliin, dose, four to eight grains; infusion, dose, two to four ounces; decoction used as a local application to ulcers and sore mouth, and as an injection in leucorrhœa and gleet. A poultice made from the root is useful for carbuncles, indolent tumors, buboes, foul ulcers, and for stings of insects.

Bitter-root (*Apocynum Androsæmifolium*, Fig. 199). — An indigenous plant, growing in rich soils in the United States and Canada. The root is the part used, and is laxative, tonic, diaphoretic, and alterative. It is employed in chronic affections of the liver, syphilis, scrofula, intermittents, and the low stage of typhoid fevers. Forty to fifty grains will cause vomiting without much nausea.

Preparations. — Fluid extract, dose, as a tonic, ten to twenty drops; as a diaphoretic, fifteen to twenty-five drops; as an emetic, half

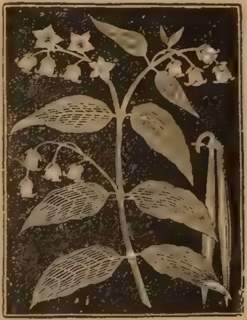


FIG. 199. BITTER-ROOT.

a dram to a dram. Solid extract, dose, two to eight grains; apocynin, the active principle of the root, dose, half a grain to two grains; tincture, dose, two to three drams; infusion, dose a wine-glassful, three times a day.

Bismuth. — The principal preparation of this metal used in medicine, is the *trisnitrate of bismuth*, also called *nitrate*, *subnitrate*, and *white oxide of bismuth*. It is a white powder, without smell or taste. It is used for various irritable and painful affections of the stomach, when there is no acute inflammation. It is particularly useful in chronic diarrhœa, more especially the diarrhœa of the latter stages of consumption, *over which it has more control than any other known remedy*. To show its best effects in this form of diarrhœa, it should be given in large doses, not less than fifteen to twenty grains, immediately after each meal. The small doses usually given are comparatively useless. Given in these full doses, it is also almost a specific in heartburn and water-brash.

Bittersweet (*Solanum Dulcamara*). — This is common in Europe and North America. It is a woody vine, the roots and stalks of which are used in medicine. It is slightly narcotic, and has alterative and diaphoretic properties. It is used in scaly and syphilitic affections of the skin. It is said to have antaphrodisiac properties, and is serviceable in mania connected with strong venereal propensities.

Preparations. — Fluid extract, dose, half a dram to a dram; solid extract, dose, three to eight grains; infusion, dose, one to three ounces, three or four times a day.

Black Alder (*Prinos Verticillatus*). — This shrub is common in the United States, its bark and berries are used. It has been found useful in jaundice, diarrhœa, intermittent fever and other diseases connected with debility. Applied locally in the form of a wash or poultice, and given internally, it is popular in chronic eruptions of the skin, and in flabby, ill-conditioned ulcers, and mortification.

Preparations. — Fluid extract, dose, two drams; tincture, dose, two to four drams.

Two drams of the fluid extract of black alder, one dram of the fluid extract of golden seal, and one pint of water, mixed, and taken in doses of four fluid ounces, three or four times a day, are valuable in dyspepsia.

Blackberry (*Rubus Villosus*). — There are many species of this growing in the United States. The bark of the root is the part used. It is tonic, and strongly astringent, and is a valuable remedy in diarrhœa, dysentery, cholera-infantum, relaxed condition of the bowels of children, and the passive discharge of blood from the stomach, bowels, and womb.

Preparations. — Fluid extract, dose, half a dram to a dram; solid extract, four to six grains; tincture, dose, two to four drams; infusion, dose, one ounce. This last preparation is also useful as an injection in gleet, leucorrhœa, and prolapsus of the rectum and womb. The syrup of the blackberry-root is also a valuable preparation; so also is blackberry brandy, so called, which is the juice of the fruit mixed with brandy. This is excellent in summer complaints.

Black Cohosh (*Cimicifuga Racemosa*, Fig. 200). — This grows in rich soils throughout the United States. The root is the part used. It is slightly narcotic, sedative, antispasmodic, antiperiodic, and exerts a marked influence over the nervous system; being useful in St. Vitus's dance, epilepsy, nervous excitability, asthma, delirium tremens, and many spasmodic affections. It has an especial affinity for the uterus.

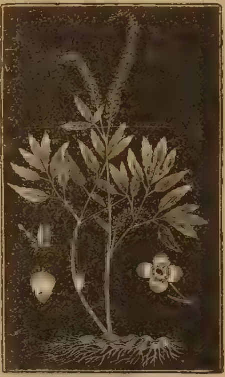


FIG. 200.
BLACK COHOSH.

It reduces the arterial action very materially, and hence is useful in palpitation of the heart. It has been used successfully in acute rheumatism, but more particularly in chronic rheumatism.

Preparations. — Fluid extract, dose, half a dram to two drams; solid extract, dose, four to eight grains; tincture, four ounces to the pint of alcohol; dose, one to three drams; cimicifugin, the active principle, dose, one to six grains.

Black Willow (*Salix Nigra*).— This tree is found in the Northern States, along the banks of rivers, especially in New York and Pennsylvania, and is known by the common name of pussy-willow. It is a bitter tonic, and is sometimes used in fever and ague. A decoction made from the buds is said to be a powerful antaphrodisiac, and is accordingly useful in the treatment spermatorrhea.

Bloodroot (*Sanguinaria Canadensis*, Fig. 201). — A perennial plant, growing in light, rich soils, in most parts of the United States. The root is the part used. It is emetic, narcotic, expectorant, alterative, escharotic, and errhine. It is used in typhoid pneumonia, bronchitis, rheumatism, dyspepsia, etc. Three to five grains stimulates the digestive organs, and accelerates the pulse.

Preparations. — Fluid extract, dose, five to fifteen drops; solid extract, half a grain to a grain and a half; tincture, twenty drops to a dram; sanguinaria, the alkaloid principle, from one-twentieth to one-tenth of a grain.

Four-grain pills, made of sanguinarin, twelve grains, caulophyllin, twelve grains, solid extract of cimicifuga, twelve grains, are said to be efficacious in amenorrhœa, dysmenorrhœa, and other female disorders.

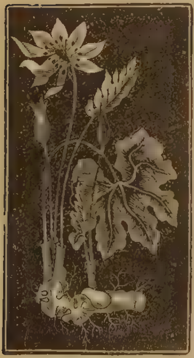


FIG. 201.
BLOODROOT.

Blue Cohosh (*Caulophyllum Thalictroides*, Fig. 202). — A perennial plant, growing in low, moist grounds in most parts of the United States. The root is the part used. It is antispasmodic, diuretic, diaphoretic, alterative, emmenagogue, anthelmintic, parturient, and tonic. It is used in rheumatism, dropsy, epilepsy, hysterics, cramps, amenhorrhœa, dysmenorrhœa, chorea, leucorrhœa, hiccough, to hasten delivery, and to relieve after-pains.

Preparations. — Fluid extract, dose, fifteen to thirty drops; solid extract, dose, one to three grains; tincture, dose, half a dram to a dram; infusion, dose, two to three ounces; caulophyllin, the active principle of the root, dose, one-quarter of a grain to a grain.

In cases of protracted labor, occasioned by fatigue or debility, the infusion is said to be fully equal to ergot in hastening delivery. A wash made by combining one ounce of fluid extract with one ounce of the fluid extract of golden seal, and eight ounces of water, is very excellent for apthous sore mouth.

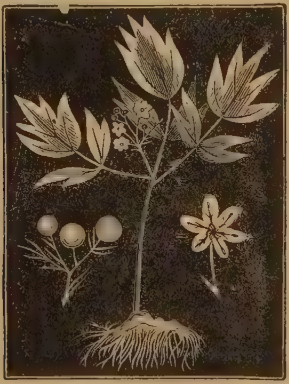


FIG. 202. BLUE COHOSH.

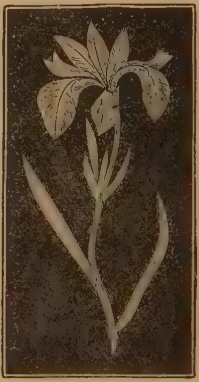


FIG. 203. BLUE FLAG.

Blue Flag (*Iris Versicolor*, Fig. 203). — A perennial plant, growing in damp places, in most parts of the United States. The root is the part used for medicinal purposes. It is cathartic, alterative, sialagogue, and diuretic. It acts particularly on the glandular system; in large doses, it evacuates and exhausts the system, acting on the liver, and fulfilling the purposes of mercury.

Preparations. — Fluid extract, dose, twenty to forty drops; solid extract, one to three grains; tincture, one to two drams. Iridin, the active and resinous principle, dose, half a grain to three grains. Equal parts of blue flag, mandrake, and prickly-ash bark, mixed, and given in five- to ten-grain doses, every two or three hours, will act as a powerful alterative, and cause free salivation, without making the breath offensive or injuring the gums. Three grains of iridin, five grains of leptandrin, and twenty grains of bitartrate of potassa, form an excellent cathartic in dropsy, producing free watery stools.

Blue Pill (*Hydrargyri Pilulæ*).— This mercurial preparation, generally known by the common name of *blue mass*, or *blue pill*, is made by rubbing mercury, confection of roses, and pulverized liquorice-root together until all the mercurial globules disappear. The mass is divided into pills when wanted. It is the mildest of all the mercurial preparations, and the least liable to produce salivation or irritation of the system. But even this should be used sparingly, and with caution, and I do not recommend its use.

The blue mass is alterative and cathartic, and is considerably given to stimulate the action of the liver, and to produce an alterative effect upon the digestive organs. The leptandra and the podophyllum have become its rivals, and will, I sincerely hope, finally take its place.

Boneset (*Eupatorium Perfoliatum*, Fig. 204).— An indigenous plant growing in most parts of the United States. The tops and leaves are medicinal. It is tonic, diaphoretic, expectorant, and, in large doses, or when taken as a warm infusion, emetic and aperient.

Preparations.— Fluid extract, dose, one to two drams; solid extract, dose, five to fifteen grains; tincture, dose, one to one and one-half ounces; infusion, dose, one to two ounces. Eupatorin, dose, one to three grains.

Two scruples of eupatorin, one scruple of xanthoxylin, and one grain of strychnia, mixed, and made into twenty powders, is excellent for torpor of the liver or kidneys, and for rheumatism; one powder being taken three or four times a day.

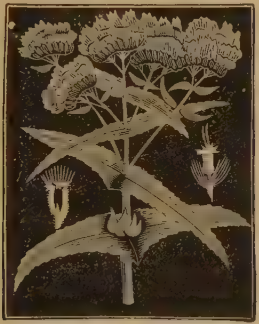


FIG. 204. BONESET.

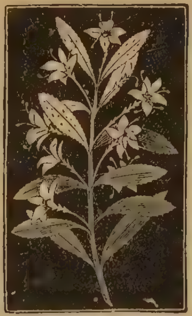


FIG. 205. BUCHU.

Buchu (*Barosma Crenata*, Fig. 205).— It grows at the Cape of Good Hope. The leaves are the medicinal portion; they are stimulant, diuretic, antispasmodic and tonic. Buchu is chiefly given in complaints of the urinary organs, attended with increased uric-acid gravel, chronic inflammation or morbid irritation of the bladder, urethra, and prostate, and retention or incontinence of urine.

Preparations.— Fluid extract, dose, half a dram to two drams; tincture, dose, two to five drams; infusion, one to five ounces. A combination of fluid extract of buchu half an ounce, acetate of potash two drams, and water eight ounces, taken in doses of four ounces three or four times a day, is a valuable diuretic.

This combination, however, may be improved by the addition of a little sweet spirits of nitre.

Buckhorn Brake (*Osmunda Regalis*). — This is a fern growing in moist grounds in most parts of the United States. The root, which is the medicinal part, should be gathered in the latter part of May, and in August, and very carefully dried, to prevent moulding. It is mucilaginous and tonic, and is used in coughs, diarrhœa and dysentery, and as a tonic while getting up from exhausting disease. One root infused in a pint of hot water for half an hour will convert it into a thick jelly. This mucilage may be sweetened with sugar, and freely taken.

Buckthorn (*Rhamnus Catharticus*). — This plant grows in Europe, where it is much esteemed by practitioners. The berries and juice are actively medicinal. It is a powerful cathartic, producing large watery discharges. It is seldom used alone on account of the severity of its action.

Preparations. — Fluid extract, dose, one dram; syrup of buckthorn, made by uniting four ounces of fluid extract with twelve ounces of simple syrup, dose, two drams.

Bugleweed (*Lycopus Virginicus*). — This grows in shady and wet places throughout a greater part of the United States. The whole herb is used. It is a mild narcotic, sedative, sub-astringent, and styptic. It is a valuable remedy in bleeding from the lungs, incipient consumption and pneumonia. It quiets irritation and allays cough and nervous excitement.

Preparations. — Fluid extract, dose, one to two drams; infusion, dose, two to four ounces.

Burdock (*Lappa Minor*). — A native of Europe, and growing in the United States. The root is used, which is useful in scurvy, syphilis, scrofula, gout, leprosy, and disease of the kidneys. It needs to be used for a long time. It is said to be useful for persons afflicted with boils, stye, etc. An ointment prepared from it is serviceable in some diseases of the skin, and obstinate ulcers.

Preparations. — Fluid extract, dose, one dram; solid extract, dose, five to fifteen grains; tincture, dose, half an ounce to an ounce.

Burgundy Pitch. — This is the concrete juice of the Norway pine, *Abies excelsa*, growing in Europe and Northern Asia, and of the silver fir-tree of Europe, *Abies picea*. It gently excites the skin, and is used chiefly in the form of plasters, either alone or mixed with other gums and resins.

Butternut (*Juglans Cinerea*). — This is a forest tree, growing in various parts of this continent, known also by the names of oilnut and white walnut. The inner bark of the root is used, and is a mild cathartic, being useful in cases of constipation. It is much employed by families as a domestic remedy, in intermittent and remittent fevers. It evacuates the bowels without debilitating them.

Preparations.—Fluid extract, dose, one to two drams; solid extract, dose, five to fifteen grains; juglandin, the active principle, dose, one to three grains. A very good pill is made by mixing one and a quarter drams of the solid extract of butternut, three-quarters of a dram of the solid extract of jalap, and ten grains of soap, and dividing the whole into sixteen pills. Two or three may be taken for a dose.

Calcined Deer's Horn (*Cornu Cervinæ Ustum*).—The horns of the deer are said to be in velvet between August and December, and during this period those which fall are collected, coarsely rasped, and placed in an iron vessel, which is tightly covered and placed in an oven, or elsewhere, and subjected to a heat of 200° F., which is continued until the rasped horn becomes of the color of roasted coffee. When cooled, it is reduced to powder by trituration, and preserved in closely stopped vials. It is a powerful styptic, taken in teaspoonful doses every half-hour; or, a teaspoonful added to a gill of hot water, and a tablespoonful of this taken every five or ten minutes. It has much efficacy in floodings from the womb, and in excessive menstruation.

Calomel (*Hydrargyri Chloridum Mite*).—This is prepared from mercury, sulphuric acid and common salt. It is alterative, antisyphilitic, and anthelmintic, and, in large doses, purgative. It is much used in venereal diseases and chronic affections of the liver, combined with opium; in dropsies, combined with squill, foxglove and elaterium; and in rheumatism and leprosy, combined with antimonials, guaiacum, and other sudorifics. In the beginning of fevers and other complaints, it is often combined with purgatives, as gamboge, scammony, jalap and rhubarb. Given in small doses, not large enough to purge, it gradually excites salivation. Dose, from one to three grains.

The tendency of this article to produce salivation, to injure the gums, loosen the teeth, etc., has given rise to much prejudice against it in the public mind; and, indeed, it must be confessed that it has been used by many, from time immemorial, with great indiscretion. In the hands of sensible and prudent men, it is very serviceable in some cases; but the podophyllum and leptandra have so fine an action upon the liver, that they are fast taking the place of calomel and other mercurials, and possibly may in time wholly supersede them. I have not prescribed it in this book, and do not recommend its use.

Camphor (Fig. 206). — This is obtained from an evergreen tree, growing in the East Indies, — *Laurus camphora.* It is a white, shiny, crystalline substance, extracted from the wood and roots of the above-named tree by boiling them, and is subsequently purified by sublimation. It has a penetrating, peculiar diffusible odor, and a pungent, cooling taste. It is moderately stimulant, diaphoretic, and antaphrodisiac. Dose, from one to ten grains.

FIG. 206. CAMPHOR TREE.

Canada Balsam. — This is the fluid obtained from the fir-balsam, *Abies balsamea*, of Canada, Maine, etc. It is a stimulating diuretic, and, in large doses, cathartic. A dose is from ten to fifteen drops, two or three times a day, in pills, or in emulsion. It forms a part of several ointments and plasters. It is used to mount objects in microscopic investigations.

Canada Fleabane (*Erigeron Canadense*). — An annual plant, growing in the Northern and Middle States. It is diuretic, tonic, and astringent, and has been found useful in dropsical complaints and diarrhœa. The dose of the powder is from thirty grains to a dram; of the infusion, from two to four fluid ounces; of the solid extract, from five to eight grains; to be repeated, in each case, every two or three hours.

Canella (*Canella Alba*). — This is the bark of a South American tree, and is an aromatic stimulant and a gentle tonic, and useful in debility of the stomach.

Caraway (*Carum Carui*). — This biennial plant grows in Europe. The seeds are the part used, and are aromatic and carminative; they are used in wind colic, and to improve the flavor of other medicine. The dose is from ten to sixty grains. The dose of the oil of caraway, extracted from the seeds, is from one to five drops.

Cardamom (*Alpinia Cardamomum*). — This plant grows on the mountains of Malabar. The seeds, which are the medicinal parts, are aromatic and carminative, and are used to expel wind, and to flavor medicines. Dose, from ten grains to two drams. The volatile oil obtained from them has similar properties.

Cascarilla. — This medicine is the bark of the West India shrub, *Croton eleuteria.* It has an aromatic odor, and a warm, spicy taste. It is a pleasant aromatic and tonic, and is used in dyspepsia, chronic diarrhœa and dysentery, wind colic, and other debilities of the stomach and bowels. It counteracts the tendency of cinchona to produce nausea.

Preparations. — Fluid extract, dose, twenty to twenty-five drops;

tincture, dose, one dram; infusion, dose, one to two drams. An alkaline infusion, composed of fluid extract, three ounces; carbonate of potassa, two drams; and water, ten ounces, is excellent in weak stomach, with acidity. Dose, one dram.

Castor (*Castoreum*). — A peculiar substance obtained from the beaver. It is antispasmodic and emmenagogue. It is used in typhus, hysterics, epilepsy, retention of the menses, and in many other nervous diseases. Dose, from ten to fifteen grains. A medicine of no great value.

Castor Oil (*Oleum Ricini*). — This is obtained by expression from the seeds of the castor-oil bush, *Ricinus communis*. When exposed to the air, it becomes rancid and spoils.

As a mild cathartic this oil is extensively used, but may be rendered less offensive by being mixed with a few drops of oil of wintergreen, peppermint or cinnamon; and its bad taste may be nearly destroyed by rubbing it up to a thick batter with carbonate of magnesia. Or, if boiled a few minutes with a little sweet milk, sweetened with loaf sugar, and flavored with essence of cinnamon or peppermint, it may be easily taken. Dose, for an adult, one to two tablespoonfuls; for a child, one, two or three teaspoonfuls, according to its age.

Catechu. — This is a solid extract, made from the wood of the *Acacia catechu*, a tree growing in Asia. It is in dark, brown, and brittle pieces, and is soluble in alcohol. It is a powerful astringent, and is used in chronic diarrhœa and chronic dysentery. It makes a useful gargle in some forms of sore mouth, in elongated uvula, spongy gums and sore nipples. The dose of the powder is from ten to twenty grains, and of the tincture, from one to two teaspoonfuls.

Catnip (*Nepeta Çataria*). — A native of Europe, and widely naturalized in this country. The tops and leaves are the medicinal part, and are carminative and diaphoretic when drunk as a warm infusion. It is useful in fevers, in wind colic, nervous headache, hysterics, and nervous irritability.

Preparations. — Fluid extract, dose two to three drams; infusion, dose two to three ounces. Fluid extract of catnip, two ounces; and the fluid extract of saffron, one ounce and a half, united, make a popular remedy for colds, and the rashes of children. In nervous complaints, a combination of fluid extract of catnip, six drams; fluid extract of valerian, four drams; and fluid extract of scullcap, four drams, is a valuable remedy. Dose, one to two drams.

Cayenne Pepper (*Capsicum Annuum*, Fig. 207). — This plant grows in hot climates, and is known by the common name of *red pepper*. The berry, which is the part used, has an intensely hot and pungent taste. It is a powerful, diffusible stimulant, and is about the only stimulus which the stomach will bear in certain forms of dyspepsia. It is useful in all cases of diminished vital action, and is frequently united with other medicines, either to promote their action, or to lessen the severity of their operation. It is much used in colds, hoarseness, etc., as it promotes a free discharge of mucus and phlegm. Taken in small doses, it has a fine effect upon the mucous membrane of the stomach and bowels, lessening very much the severity of piles, and sometimes curing them. It may be sprinkled daily upon the food, or taken in the form of cayenne lozenges; it is frequently useful as a gargle in sore throats, scarlet fever, etc. Dose of the powder from one to eight grains.

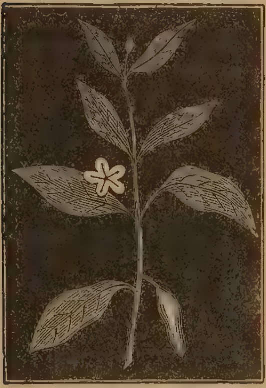


FIG. 207. CAYENNE PEPPER.

Preparations. — Fluid extract, dose, five to ten drops; tincture, dose, half a dram to a dram, used in low forms of fever, and gastric insensibility; infusion, dose, one to two drams. A valuable gargle in scarlet fever may be made by combining fluid extract of cayenne one ounce; common salt, one dram; boiling vinegar, one pint; boiling water, one pint.

Celandine (*Chelidonium Majus*). — This plant is indigenous to Europe, and is extensively naturalized in the United States. It is a drastic purge, producing watery stools, and is equal to gamboge; it is useful in affections of the liver, and particularly in those of the spleen. In the form of a poultice it is effective in scrofula, indolent ulcers, skin diseases, and piles.

Preparations. — Fluid extract, dose, ten to fifteen drops; solid extract, dose, five to eight grains; tincture, dose, half a dram to a dram; infusion, dose, two and a half to four drams. A very good hydragogue cathartic is made by compounding two and a half drams of fluid extract of celandine with half a dram of fluid extract of henbane, one ounce of sulphate of potassa, one grain of tartar emetic, six ounces of elder-water, and ounce of syrup of squill.

Chalk.— On account of its gritty particles, it is unfit for medicinal use until it has been levigated, after which it is called *prepared chalk.* This is the only form in which it is used in medicine. It is an excellent antacid, and is admirably adapted to diarrhœa accompanied with acidity. The most convenient form of administering chalk is that of the chalk mixture, which consists of prepared chalk, half an ounce; sugar and powdered gum-arabic, two drams each; cinnamon-water and water, four fluid ounces each, and rubbed together in a mortar till they are thoroughly mixed. Dose, a tablespoonful frequently repeated.

Cassia-Buds. — This spice is a product of China. It consists of the calyx surrounding the young germ of one or more species of cinnamon. Cassia buds have some resemblance to cloves, and are compared to small nails with round heads. They may be used for the same purposes as the cinnamon-bark.

Chamomile (*Anthemis Nobilis*, Fig. 208). — This perennial plant grows in Europe, and its flowers, the whitest of which are best, are considerably used in medicine. They are gently tonic, and are generally used in cold infusion, in cases of weak stomach, dyspepsia, etc. In large doses, the warm infusion will act as an emetic.

Preparations. — Fluid, extract, dose, half a dram to a dram; solid extract, dose, four to fifteen grains; infusion, dose, half an ounce to an ounce. For dyspepsia, wind in the stomach, etc., thirty pills may be made by combining one dram of solid extract of chamomile with five grains of the solid extract of rhubarb and ten grains of assafœtida, and taken, one pill at a time, two or three times a day, with advantage.

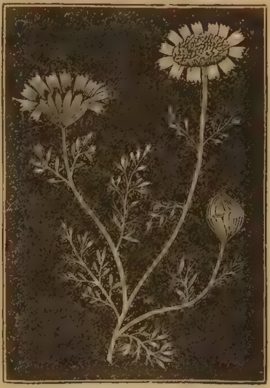


FIG. 208. CHAMOMILE.

Charcoal (*Carbo Ligni*).— Prepared charcoal is antiseptic and absorbent, and is employed with great advantage in certain forms of dyspepsia, attended with bad breath and putrid eructations; it has a good effect in correcting the fetor of the stools in dysentery: it is considerably used, and with much advantage, as an ingredient in poultices. Dose, when taken internally, from one to three teaspoonfuls.

Chloroform (*Chloroformum*).— This is an anæsthetic, used to produce insensibility during surgical operations. A teaspoonful or more is poured upon a handkerchief, which is held to the patient's nose, but not so closely as to prevent the admission of air. The numerous sudden deaths which have occurred from its use prove it to be an unsafe agent, and it is now seldom employed by careful surgeons. Taken internally it is sedative and narcotic; applied externally, combined with other articles, it is useful in painful affections, as nervous headache, rheumatism, neuralgia, etc. The dose when taken internally is from ten to twenty drops, in flax-seed tea.

Cinnamon. — This is the bark of trees growing in Ceylon, Malabar, and Sumatra. It is a very grateful aromatic, being warm and cordial to the stomach; it is also carminative and astringent.

It is not often prescribed alone, but is chiefly used as an aid to less pleasant medicines, and enters into a great number of preparations. It is peculiarly adapted to diarrhœa; and in treating this complaint it is often joined with chalk and astringents. Dose of the bark, from ten to fifteen grains. The oil has properties similar to those of the bark.

Cleavers (*Galium Aparine*). — An annual plant, common to this country and Europe, having an acid, astringent taste. The whole herb is used in infusion, as a cooling diuretic, in scalding of the urine, inflammation of the kidneys and bladder, in gravel, suppression of the urine, etc.

It is also used in fevers and all acute diseases. The infusion is made by adding two ounces of the herb to a pint and a half of warm water. It should stand three or four hours, and be drunk freely when cold. Equal parts of elder-blows, cleavers, and maiden-hair, infused in warm water, make a refreshing drink in scarlet fever and other eruptive diseases.

Cloves (*Caryophyllus Aromaticus*). — The flowers of this tree, a native of tropical climates, collected before they are fully developed, form cloves. They are highly stimulant and aromatic, and are used to give tone to the digestive organs, particularly when flatulency exists, and to relieve nausea and vomiting. They are more generally employed to improve the taste and modify the action of other medicines. The dose in powder is from five to eight grains. The oil of cloves has similar properties; dose, one to three drops. A little cotton moistened with the oil, and pressed into a decayed tooth, will frequently relieve the toothache.

Cochineal (*Coccus Cacti*). — An insect found in Mexico, inhabiting different species of cactus. They are gathered for use by detaching them from the plant with a blunt knife, and dipping them, enclosed in a bag, into boiling water. Cochineal is anodyne, and has been used with advantage in whooping-cough and neuralgia. It is much used for coloring tinctures and ointments, and the color called carmine is prepared from it. A tincture is prepared by macerating two ounces of cochineal in one pint of alcohol for seven days, and filtering through paper. Dose, from twenty to twenty-five drops, twice a day.

Cod-Liver Oil (*Oleum Morrhuæ*). — This is obtained from the livers of codfish, and is nutritive and alterative. It is a popular remedy in consumption and scrofula, and in those complaints generally in which there is impaired digestion, assimilation, and nutrition. Dose, a tablespoonful three times a day.

Inability to digest this oil, to eat fat meats, or to take fats in any form, is an unfavorable indication in consumption.

Collodion. — This is gun-cotton dissolved in ether. It is applied with a camel's-hair brush, to cuts, burns, wounds, leech-bites, etc., over which it forms a thin pellicle or skin, protecting the injured part from the atmosphere. It should be kept in well stopped bottles, to prevent its evaporating and becoming unfit for use.

Colocynth (*Cucumis Colocynthis*). — A native of northern Africa. The part used in medicine is the fruit deprived of its rind. It is a powerful drastic, hydragogue cathartic; causing, by its harsh action, griping, vomiting, and sometimes bloody discharges; from the severity of its operations, it is rarely used alone. Useful in dropsy, derangements of the brain, and for overcoming torpid conditions of the digestive and biliary organs.

Preparations. — Solid extract, dose, two to twenty grains; compound extract, dose, two to twenty grains.

Colombo (*Cocculus Palmatus*). — A perennial climbing plant, growing in East Africa, and cultivated in the Isle of France. It is a pure, bitter tonic, and is used in dyspepsia, bilious vomitings which attend pregnancy, and during recovery from exhausting diseases.

Preparations. — Fluid extract, dose, twenty to thirty drops; solid extract, dose, four to eight grains; tincture, dose, one to three drams; infusion, dose, three drams to an ounce. A compound infusion made by uniting one dram of fluid extract, four drams of orange-peel, and one ounce of water, is useful in a weakened state of the bowels, showing itself in a diarrhœa. Dose, two drams every hour. Fluid extract of colombo, one ounce; fluid extract of ginger, two drams, and water, one pint, also make a useful compound for the same purpose. Fluid extract of colombo, one dram; fluid extract of rhubarb, one dram; fluid extract of ginger, half a dram; water, one pint, — this is useful for a like purpose. The following is also a very good preparation for a similar use; fluid extract of colombo, half an ounce; fluid extract of cascarilla, two drams; tincture of orange-peel, two drams; syrup of cinnamon, one ounce; water, six ounces. Dose, one dram every hour.

Coltsfoot (*Tussilago Farfara*).—A native of Europe, and naturalized in this country, especially in the Northern States. It grows in wet places and low meadows. The leaves are principally used. They are emollient, demulcent, and slightly tonic; used in coughs. asthma, and whooping-cough; and externally in the form of poultice for scrofulous tumors.

Comfrey (*Symphytum Officinale*). — A perennial European plant, cultivated in this country. The root is the part used. It is demulcent, and slightly astringent, and is serviceable in diseases of the mucous tissues, and in scrofulous habits; also in diarrhœa, dysentery, coughs, bleeding from the lungs, whites, etc. It may be taken as an infusion, or as a syrup, one ounce to a pint of water; the dose being one to three fluid ounces, three to four times a day. The fresh root bruised forms a valuable application to ulcers, bruises, fresh wounds, sore breasts, and white swellings.

Common Silk-Weed (*Asclepias Syriaca*). — This is a perennial plant, common throughout the United States. It gives out a milky juice upon being wounded, and hence is often called milk-weed. The root is diuretic, alterative, emmenagogue, and anodyne; and is sometimes used in dropsy, retention of urine, suppressed menstruation, scrofula, and rheumatism. Dose of the powder, from eight to twenty grains; of the decoction, from one to two fluid ounces.

Copper (*Cuprum*). — The following are the principal salts of copper used in medicine: —

Subacetate of Copper (*Cupri Subacetas*). — This is known by the name of verdigris, and is used as a detergent and escharotic; it is applied to warts and fungous growths, and to foul ulcers and ringworm. When reduced to a fine powder, by trituration in a porcelain mortar, the finer parts of this are separated, and called prepared subacetate of copper; this is the preparation used for the purposes above named.

Sulphate of Copper (*Cupri Sulphas*). — In small doses, the sulphate of copper is astringent and tonic; in large ones a prompt emetic. It is given in small doses in hysterics, epilepsy, and intermittent fevers; and in large doses, to produce speedy vomiting in croup, and to eject poisons from the stomach. A weak solution is sometimes used for syphilitic ulcers, and as an injection in gleet. Dose, as a tonic, one-quarter of a grain to one grain in pill; as a rapid vomit, from two to five grains, in two ounces of water. The medicines which are incompatible with copper, are alkalies, earths and their carbonates, borax, salts of lead, acetate of iron, and astringent vegetable infusions, decoctions, and tinctures.

Corrosive Sublimate. — This, in chemical language, is the bichloride of mercury. It is one of the milder mercurial preparations, although when taken in large doses, it is a violent poison, and operates very quickly. It is less apt to salivate than any other mercurial, except blue pill. It is much used as a remedy in syphilis, particularly in the secondary stage, in which, in many cases, it does much good. It is also popular in many skin diseases, as leprosy. When employed for this purpose, it is generally associated with alterative and diaphoretic medicines, such as the compound decoction or syrup of sarsaparilla, preparations of yellow dock, etc. In order to avoid its irritating effects, it is often united with opium, or extract of conium. Dissolved in water, it is valuable as a wash in some skin diseases. It is an ingredient in many of the quack nostrums which are extensively advertised. It is the most powerful antiseptic known.

Cotton (*Gossypium Herbaceum*). — Cotton is chiefly employed in cases of recent burns and scalds, — an application of it which surgeons have learned from popular use. It diminishes the inflammation, prevents blistering, and hastens the cure. It is applied in thin and successive layers. The absorbent should be used. The inner bark of the root is said to be emmenagogue, parturient, and abortive. It is excellent in chlorosis.

Preparation. — Fluid extract, dose, three drams.

Cranesbill (*Geranium Maculatum*, Fig. 209). — An indigenous plant, growing in all parts of the United States, in the open woods. The root is the medicinal part. It is a powerful astringent, similar to kino and catechu, and a valuable substitute for those articles, because less expensive. It forms an excellent gargle in sore throats and ulcerations of the mouth, and is valuable for treating those discharges arising from debility, after the exciting causes are removed. It has no unpleasant taste, and is therefore well adapted to infants and persons of delicate stomachs. As an injection, it is used in gleet and whites.

Preparations. — Fluid extract, dose, half a dram to a dram; solid extract, dose, three to ten grains; geraniin, the active principle, dose, one to three grains; tincture, dose, two and a half to three drams; infusion, dose, one to two ounces. A valuable astringent wash for sore mouth, etc., and as an injection in leucorrhœa, etc., is made by uniting fluid extract of cranesbill, half an ounce; fluid extract of black cohosh, half an ounce; fluid extract of golden seal, half an ounce; fluid extract of witch-hazel, half an ounce; and water, one quart. Geraniin, dioscorein, and caulophyllin, united in equal parts, and given to an adult in six-grain doses, every fifteen or twenty minutes, have an excellent effect in diarrhœa and cholera-morbus, when there is much pain and rumbling of the bowels.

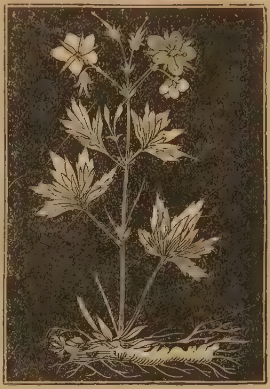


FIG. 209. CRANESBILL.

Crawley (*Corallorhiza Odontorhiza*). — A perennial plant, growing on barren hills and hard clay soils in New York. The root is the part used. It is sedative and diaphoretic, and is used in inflammatory diseases, and in typhoid fever; also in flatulency, cramps, hectic fever and night-sweats. When the liver requires to be acted upon, it should be combined with mandrake or Culver's root. The powdered root should be kept in well-stopped vials; its dose is from twenty to twenty-five grains, in warm water, every hour or two.

Creosote (*Creosotum*). — This is obtained by the distillation of tar. It is irritant, narcotic, styptic, antiseptic, and moderately escharotic. It has been given in diabetes, epilepsy, hysterics, neuralgia, bleeding from the lungs, and chronic bronchitis. It is an excellent remedy for arresting nausea and vomiting, when not dependent on inflammation. The dose, when given internally, is one or two drops. It is most easily taken in the form of pill. In some forms of bronchitis, the vapor of creosote is inhaled with advantage. It may sometimes be applied with excellent effect, to indolent or ill-conditioned ulcers, in which case, two, four, or six drops may be dissolved in an ounce of distilled water. In some cases the solution is mixed with poultices. One or two drops of pure creosote, introduced into a hollow tooth on a little cotton, is generally a speedy remedy for toothache, but great care must be taken that it does not come in contact with the tongue or cheek.

Croton Oil (*Oleum Tiglii*). — This is obtained from the seeds of the *Croton Tiglium*, a plant growing in the East Indies. It is a powerful cathartic, producing watery stools, and is used in torpidity of the bowels, dropsy, apoplexy, mania, inflammation of the brain. hydrocephalus, coma, and wherever a powerful revulsive action is needed to call the blood away from the brain. A drop placed on the tongue of a person in the comatose state, will generally operate. Two to six drops, rubbed upon the skin, produce an eruption of pimples in twelve hours. In this way, it is used in diseases of the throat and chest, and some other affections. If the skin is very sensitive, let it be combined with an equal quantity of sweet oil. Use only under the direction of a physician.

Cubebs (*Cubebæ*). — A climbing perennial plant, growing in the East Indies. The berries are the medicinal part. They are stimulant, purgative, and diuretic, acting particularly upon the urinary organs and arresting discharges from the water-pipe, and much used in the treatment of gonorrhœa and gleet. It should not be used during active inflammation. Dose of powdered cubebs, from thirty to forty grains.

Preparations. — Fluid extract, dose, half a dram to a dram and a half; ethereal fluid extract, dose, one to two drams; solid extract, dose, two to twenty grains; tincture, dose, one to two drams. A compound, made of fluid extract of cubebs, five drams; fluid extract of ergot, one and a half drams; cinnamon water, half a dram; and powdered loaf-sugar one dram, may be taken with advantage in gonorrhœa, gleet, and leucorrhœa; dose, one dram.

Culver's Root (*Leptandra Virginica.*) — A perennial plant growing throughout the United States in limestone districts, and flowering in July and August. The root is the medicinal part. It is frequently called *black root.* When dried, it is tonic, cholagogue, and laxative, and is a very valuable remedy in affections of the liver, as it acts upon this organ with energy, without purgation. It is also useful in typhoid fevers, and in dyspepsia, diarrhœa, and dysentery. A powder is made from it, containing its active principle, and called leptandrin, which has a fine effect in diarrhœa, cholera infantum, typhoid fever, some forms of dyspepsia, and in all diseases connected with derangements of the liver.

Preparations. — Fluid extract, dose, one-third of a dram to a dram; leptandrin, the active principle, dose, in acute cases, one-fourth of a grain to one grain; in chronic cases, one to two grains; tincture, two ounces to a pint of alcohol, dose, one dram to one-half ounce.

Dandelion (*Taraxacum, Dens Leonis.*) — This perennial herb is diuretic, aperient, and tonic, It is generally thought to act especially upon the liver. Used in dyspepsia, diseases of the liver and spleen, and in debilitated and irritable conditions of the stomach and bowels.

Preparations. — Fluid extract, dose, one to two drams; compound fluid extract, dose, one to two drams; fluid extract of dandelion and senna, dose, one to two drams; solid extract, dose, ten to fifteen grains; infusion, two ounces to one pint of water, dose, four to five ounces. In dropsical affections, the following compound infusion will be found useful: fluid extract of dandelion, six drams; fluid extract of rhubarb, one and a half drams; fluid extract of henbane, twenty-four drops; bicarbonate of soda, half a dram; tartrate of potassa, three drams; water, three and a half ounces; take one-third, three times a day. For jaundice and diseases of the liver and kidneys, the following pills have much efficacy: Solid extract of dandelion, one dram; solid extract of bloodroot, one dram; leptandrin, one scruple; podophyllin, five grains; oil of peppermint, five minims; to be divided into fifty pills, and one or two taken three times a day.

Deadly Nightshade. — (*Atropa Belladonna*, Fig. 210). — A perennial plant, growing in Europe and this country, and having a faint odor, and a sweet, nauseous taste. It is narcotic, diaphoretic, and diuretic; is a valuable remedy in convulsions, neuralgia, whooping-cough, rheumatism, gout, paralysis, and many diseases having their seat in the nervous system. It has been much praised as a preventive of scarlet fever, though its powers for this purpose are doubtful.

Preparations. — Fluid extract, dose, five to eight drops; solid extract, dose, one quarter to one grain; tincture, two ounces to a pint of diluted alcohol; dose, from thirteen to thirty drops. The solid extract is used, mixed with lard or with other substances, as a local application for relieving pain, dilating the pupil of the eye, for removing stricture of the urethra, the anus, rigidity of the mouth of the womb, etc.

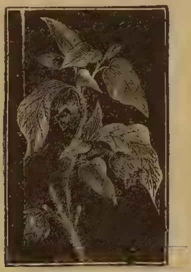


FIG. 210. DEADLY NIGHTSHADE.

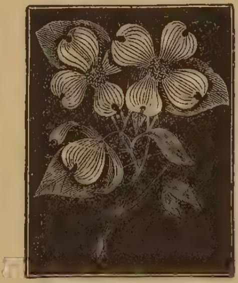


FIG. 211. DOGWOOD.

Dogwood (*Cornus Florida*, Fig. 211). — This is a small tree growing most abundantly in the Middle States. The bark is used as a medicine. It is tonic, astringent, antiperiodic and stimulant.

It increases the frequency of the pulse and elevates the temperature of the body. It has been substituted for Peruvian bark in intermittent fevers. Dose of the powdered bark, from ten to sixty grains.

Preparations.—Fluid extract, dose, half a dram to two drams; solid extract, dose, five to eight grains; tincture, four ounces to a pint of alcohol, dose, one to three drams; infusion, two ounces to a pint of water, dose, half an ounce to two ounces; cornin, the active principle, dose, one to eight grains.

Dwarf Elder (*Aralia Hispida*).—A perennial under-shrub, growing from New England to Virginia. The bark of the root is diuretic and alterative. An infusion made from it is used in gravel, suppression of the urine, and dropsy; to be taken in wineglassful doses, three or four times a day.

Elder (*Sambucus Canadensis*).—The flowers, berries and inner bark of the elder are used in medicine. A warm infusion of the flowers is diaphoretic, and gently stimulant. A cold infusion is diuretic, alterative and cooling; used in erysipelas, liver affections of children, rheumatism, scrofula, and some syphilitic diseases. The bark, pounded with lard, forms a useful ointment for burns and scalds, and some diseases of the skin.

Elecampane (*Inula Helenium*).—This perennial plant is a native of Europe and Japan, and is cultivated in this country. The root is stimulant, tonic, diuretic and expectorant, and is used in chronic affections of the lungs and air-passages. It is said a decoction from the root forms a good application for the itch and other skin diseases. Dose of the powdered root, from a scruple to a dram; of the infusion, one fluid ounce.

Electro-Magnetism.—Within a few years, electro-magnetism has been employed extensively as a remedial agent, particularly in the various forms of nervous disorders. That it is a valuable agent in the treatment of disease, few thinking physicians doubt; yet, like most other new things in medicine, it has had its enthusiastic admirers, who have claimed for it remedial powers beyond what it really has, and who have applied it to purposes beyond its sphere of usefulness.

Feverfew (*Pyrethrum Parthenium*).—In warm infusion, this herb is valuable in recent colds, flatulency, worms, irregular menstruation, hysterics, and suppression of the urine. The cold infusion is a tonic. A poultice made of the leaves soothes and alleviates pain.

Figwort (*Scrophularia Nodosa*).—The leaves and root are diuretic, alterative, and anodyne, and in some places are used in liver complaints, scrofula, dropsy, and diseases of the skin. Applied externally in the form of ointment, or fomentation, it is said to be useful in piles, painful tumors, bruises, ringworm, and inflammation of the breasts. Dose of the infusion, from two to three fluid ounces, three times a day.

Flaxseed (*Linum Usitatissimum*). — This is demulcent and nutritive, and is much used in coughs, bronchial diseases, inflammation of the urinary organs, bowels and lungs; chiefly taken in the form of flaxseed tea. The infusion is sometimes used as an injection in dysentery and piles. Linseed oil is prepared from flaxseed.

Foxglove (*Digitalis Purpurea*, Fig. 212).—A biennial plant, growing in the temperate parts of Europe. The leaves, in proper doses, are sedative and diuretic, reducing the pulse, and increasing the flow of urine. In large doses, they are a narcotic poison. The medicine has been much used in inflammatory diseases, palpitation of the heart, and in dropsy connected with diseased heart or kidneys. When taken for some time, it is liable to accumulate in the system, and suddenly to manifest poisonous and alarming symptoms, as if a large dose had been taken. The American hellebore is sometimes used in its place.

Dose of the powdered leaves of foxglove, from one to three grains; of the tincture, from eight to ten drops.

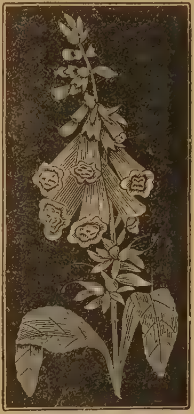


FIG. 212. FOXGLOVE.

Frostweed (*Helianthemum Canadense*). — This herb, also known by the name of rockrose, is tonic, astringent, and alterative, and has been considerably used in scrofula; combined with turkey-corn and queen's-root, it is said to have effected cures in secondary syphilis. A decoction forms a useful gargle in ulcerations of the mouth and throat in scarlet fever and other diseases, and as a wash in scrofulous inflammation of the eyes. Dose of the fluid extract, one to two drams, three or four times a day.

Galls. — These are the unhealthy excrescences found growing on the young boughs of the dyer's oak, *Quercus infectoria*, growing in Asia. They are powerfully astringent. In the form of infusion, or decoction, made in the proportion of half an ounce to a pint of water, they are useful as an astringent gargle, wash, or injection; and finely powdered galls, one part to eight parts of lard, make a valuable ointment for bleeding piles. Dose of powdered galls, from ten to fifteen grains.

Gamboge. — The hardened juice of trees growing in Siam and Cochin China. This gum-resin is a hydragogue cathartic, acting severely and harshly upon the bowels, and hence is not often used alone. On account of the severity of its action, it is improper to use it during inflammation of the stomach or bowels, piles, pregnancy, diseased womb, or excessive menstruation. Combined with cream of tartar and jalap, it is a valuable remedy in dropsy. The dose is one or two grains.

Garlic (*Allium Sativum*). —The bulb is the part used. It is stimulant, diuretic, expectorant, and rubefacient; useful in coughs, hoarseness, whooping-cough, and in the nervous spasmodic coughs of children. Dose, from twenty grains to three drams; dose of the juice, mixed with sugar, half a teaspoonful to a teaspoonful.

The bruised bulbs are sometimes usefully applied as a poultice to the chests of young children having inflammation of the lungs, and as drafts to the feet in inflammation of the brain, fevers, etc.

Gentian (*Gentiana Lutea*). — It grows among the Alps, Apennines, and Pyrenees. The root is the part used, and is brought to this country from Germany. This medicine has long maintained its reputation, having, it is said, derived its name from Gentius, king of Illyria. It is a pure and simple bitter, exciting the appetite and invigorating the digestive powers. It may be used in all cases dependent on pure debility. It is much employed in dyspepsia, and during recovery from exhausting diseases.

Preparations. — Fluid extract, dose, half a dram to a dram; compound fluid extract, dose, half a dram to a dram; solid extract, dose, three to ten grains; tincture, four ounces to one pint of diluted alcohol, dose, two to three drams. A valuable preparation is made by uniting fluid extract of rhubarb, two ounces; fluid extract of gentian, half an ounce; diluted alcohol, two pints; dose, half an ounce to an ounce.

Ginger (*Zingiber Officinale*). — This is a native of Hindostan, and is cultivated in all parts of India. The root is the part used. It is a grateful stimulant and carminative, and is much used for dyspepsia, wind in the stomach, colic, gout, etc. It is an excellent addition to bitter infusions, and is much used to disguise the taste of nauseous medicines. Dose, from ten to twenty grains.

Preparations. — Fluid extract, dose, half a dram to a dram; tincture, four ounces to one pint of diluted alcohol, dose, two to four drams; infusion, dose, one to two ounces; syrup, dose, one to two drams.

Ginseng (*Panax Quinquefolium*, Fig. 213). — A perennianl plant, growing in the Middle and Southern States. It is a mild tonic and stimulant, and has some reputation for improving impaired appetite, and for nervous debility, weak stomach, etc. Some persons are in the habit of chewing it, and it is considerably used in this way. Dose of the powdered root, from ten to forty grains; of the infusion, from two to three fluid ounces.

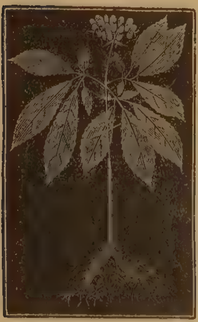
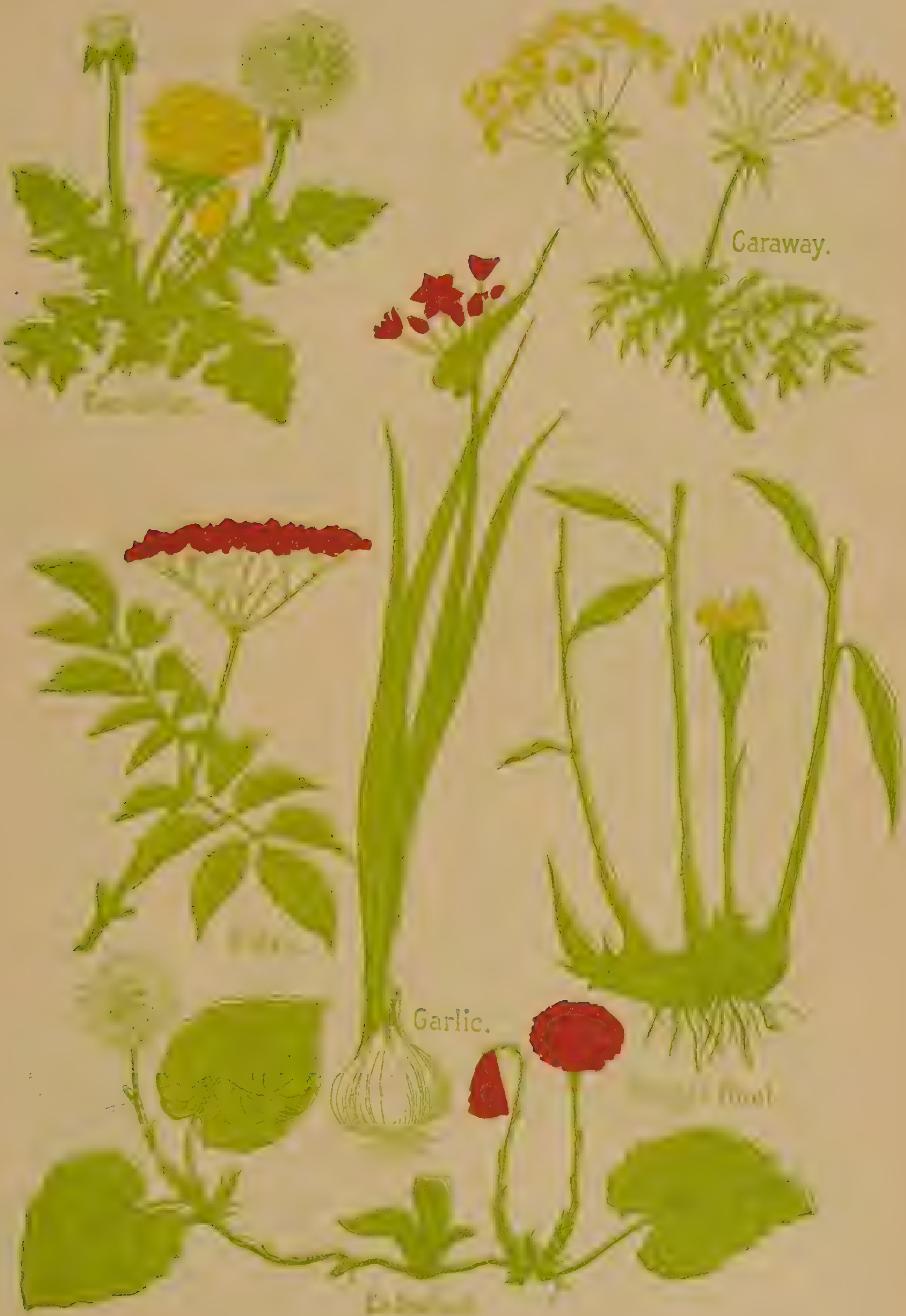


FIG. 213. GINSENG.

Glycerin. — This is the sweet or sugary portion of oils, and is obtained from them during the manufacture of lead plaster. It is demulcent and antiseptic, and has been recently recommended and used to some extent in place of cod-liver oil, in consumption. It has been still more used, however, as a soothing


Dandelion.
Caraway.
Elder.
Garlic.

and emollient external application in skin-diseases, and also in place of lard in the preparation of ointments.

Gold. — The chief salt of gold used in medicine is the chloride or muriate of gold and soda. It is diuretic and alterative. It is used in scrofula, skin diseases, goitre, scirrhous tumors, ophthalmia, dropsy and syphilis. Also in the Keeley cure for inebriates. It will, in many cases, take away the craving for liquor, but we think there is great danger of the patient becoming insane and having a desire to commit suicide. The dose is from one-thirtieth to one-twelfth of a grain, and is given dissolved in water, or made into pill with starch or gum-arabic.

Golden Seal (*Hydrastis Canadensis*, Fig. 214). —A perennial plant, growing throughout the United States, particularly in the West. The root is the medicinal part. It is a tonic, having especial action upon diseased mucous tissues, and is particularly beneficial during recovery from exhausting diseases. It is used in dyspepsia, chronic affections of the nervous coats of the stomach, erysipelas, and remittent, intermittent and typhoid fevers. United with geranium, it has a fine effect in chronic diarrhœa and dysentery.

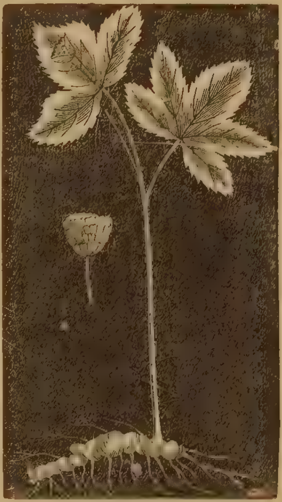


FIG. 214. GOLDEN SEAL.

Preparations. — Fluid extract, dose, half a dram to two drams; solid extract, dose, two to three grains; hydrastin (resinoid), dose, one-half to three grains; hydrastin (neutral), dose, two to five grains; hydrastina (alkaloid), dose, one to three grains; tincture, three ounces to one pint of diluted alcohol, dose, from half an ounce to an ounce. For various forms of sore mouth and ulcerated sore throat, the following is a useful gargle: fluid extract of golden seal, half an ounce; fluid extract of blue cohosh, half an ounce; fluid extract of witch-hazel, half an ounce; pulverized alum, one dram; honey, three drams; water, one pint. As a stimulant for a sluggish liver, and as a tonic in enfeebled mucous membrane in epidemic dysentery, and other complaints, the following powders are valuable: hydrastin, twenty grains; leptandrin, twelve grains; podophyllin, two grains; pulverized cayenne, two grains; sugar of milk, or pulverized loaf-sugar, one dram; rub together thoroughly in a mortar, and divide into twenty powders; give one every two hours.

Ground Ivy (*Nepeta Glechoma*). — A perennial herb, common to the United States and Europe; in some places known as *gill-over-the ground*. The leaves are the part used, which are stimulant, tonic, and pectoral; considered useful in jaundice, asthma, and diseases of the kidneys and lungs.

Guaiacum. — This medicine is the shavings or chips of the wood of a tree growing in the West Indies, also resin obtained from the same tree. It is stimulant and alterative, and is used in chronic rheumatism, diseases of the skin, scrofula, and venereal complaints. The tincture of the resin is valuable as an emmenagogue. Dose of the tincture, from one-half to two teaspoonfuls, to be taken with milk. The wood is much used as an ingredient in alterative preparations of sarsaparilla, etc.

Gum-Arabic. — This is the hardened sap of trees growing in Egypt, Arabia, and other tropical countries, being several varieties of the acacia. It is demulcent, and a combustive nutritive, and is much used in forming mixtures for hoarseness, cough, sore throat, gonorrhœea, inflammation of the bladder, strangury, bronchitis, and irritations of mucous membranes generally. Mucilage of gum-arabic is a preparation made by dissolving four ounces of powdered gum in a pint of boiling water.

Gum, Hemlock.—This is the hardened juice of the hemlock, *Abies Canadensis*, a tree growing in Canada and Maine. This gum is a mild rubefacient, and like burgundy pitch, chiefly used to make plasters, etc., for which purpose it is very valuable. A tincture of the gum is diuretic and stimulant. The oil of hemlock is valuable, in combination with other oils, in preparing liniments. The bark is astringent, and is much used in tanning leather.

Hæmastasis. — This word is used to imply the retention of the venous blood in the limbs by ligatures. A cord or common handkerchief is tied round the upper part of the arms, or thighs, and a piece of wood being slipped under the cord, is twisted round until the cord is so tightened as to prevent the return of the venous blood, but not to prevent the outward passage of the arterial blood. In this way, the blood passing out continually in the arteries, and not returning by the veins, the vessels of the limbs become filled to their utmost capacity, and a great quantity, for the time being, is withdrawn from the trunk. This process is useful in bleedings from the lungs, stomach and womb, and inflammation of the brain, lungs, bowels, etc., and in whatever case it may be thought desirable, for the time being, to lessen the blood in the head or trunk, without debilitating the patient.

Hair-cap Moss (*Polytrichum Juniperum*). — An evergreen plant growing on poor, sandy soils in the Northern States. A strong infusion of it is powerfully diuretic. In dropsical cases, two fluid ounces of the infusion should be taken every half hour. It is useful in fevers, inflammations, gravel, etc.

Hardhack (*Spirœa Tomentosa*, Fig. 215). — This is a beautiful shrub, common in the United States. Its leaves are of a dark green color above, and white underneath. It is tonic and astringent, and is much used in chronic diarrhœa, cholera infantum, etc. It agrees well with the stomach, and is deservedly a popular remedy in summer complaints of children.

A fluid extract of it is the best preparation; dose, four to twenty drops. It is much used in the form of infusion. The green herb boiled in milk forms a valuable preparation in chronic diarrhœa, when attended with much debility.

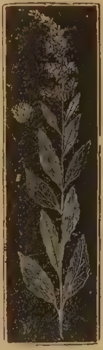


FIG. 215. HARDHACK.

Hardleaf Golden-Rod (*Solidago Rigida*). — A perennial plant, growing throughout the United States, especially on the western prairies. It is tonic, astringent and styptic, and useful to arrest bleeding from the nose, lungs, stomach, and bowels. The powder and infusion are used, both externally and internally.

Helonias (*Helonias Dioica*). — This herb is common in the United States, and is known by the name of *false unicorn* plant. The root, which is the part used, is tonic, diuretic, and vermifuge. In large doses it is emetic, and when used fresh, sialagogue. In five or seven grain doses, three times a day, it relieves dyspepsia, restores the appetite, expels worms, and relieves colic. It is a valuable womb-tonic, gradually removing debility of that organ, and curing whites, painful menstruation, and a tendency to habitual abortion. Dose of the decoction, from two to four fluid ounces. The decoction is said to kill insects, bugs, etc.

Preparations. — Fluid extract, dose, one to three drams; helonin, the active principle, dose, one-fourth to one-half a grain.

Henbane (*Hyoscyamus Niger*, Fig. 216). — This plant grows abundantly in Great Britain, and on the continent of Europe, and is rare in this country. All the parts are active. It is narcotic, gently accelerating the circulation, increasing the general warmth, occasioning a sense of heat in the throat, and after a time inducing sleep. It is often used in the place of opium, because it does not bind the bowels. Used in rheumatism, gout, bronchitis, asthma, consumption, whooping-cough, hysterics, and spasmodic affections generally.

Preparations. — Fluid extract, dose, ten to fifteen drops; solid extract, dose, half a grain to a grain; tincture, two ounces to one pint of diluted alcohol, dose, half a dram to a dram; hyoscyamin, the active principle, dose, one-eighth to half a grain. In neuralgia, rheum-

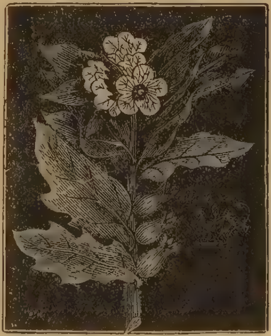


FIG. 216. HENBANE.

atism, St. Vitus's dance, painful menstruation, etc., the following may be found useful: solid extract of hyoscyamus, two drams; solid extract of valerian, two drams; solid extract of aconite, one dram· sulphate of quinia, one dram. Mix, and divide into two-grain pills; one pill every two or three hours.

High Cranberry (*Viburnum Opulus*).—This shrub grows in rich soils in Canada, and in the northern United States. The bark, which is the medicinal part, is antispasmodic, being used in cramps, spasms, asthma, hysterics, and is useful for those who are subject to convulsions during pregnancy, and at the time of childbirth. It is popularly known by the name of *cramp-bark*. A decoction or infusion of the bark may be used in tablespoonful doses, two or three times a day. Dose of the extract, from one to three grains; in womb troubles, it may be united with caulophyllin, cimicifugin, aletridin, senecin, and asclepidin; and in flatulent colic, spasmodic pains of the stomach and bowels, it may be combined with dioscorein.

Horehound (*Marubium Vulgare*, Fig. 217).—This well known perennial herb is a native of Europe, and has become naturalized in this country. It is tonic, aperient, pectoral, and sudorific. It is deservedly popular in domestic practice, for colds, asthma, throat-ails, bronchitis, and other pectoral affections, attended with cough. It is much used in candy.

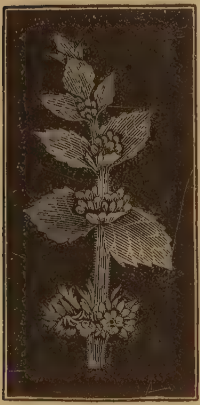


FIG. 217.
HOREHOUND.

Preparations.—Fluid extract, dose, half a dram to one dram; solid extract, dose, five to eight grains; tincture, two ounces to one pint of alcohol, dose, half an ounce to an ounce; syrup, three ounces fluid extract to one pint of simple syrup, dose, three to five drams.

Hops (*Humulus Lupulus*).—The cones of this well-known plant are tonic, hypnotic, antilithic, and anthelmintic. They are chiefly used for promoting sleep, and relieving pain and irritability of the nervous system. Hops are valuable in the form of fomentation, either alone or in combination with boneset and other bitter herbs. An ointment of hops and stramonium leaves is sometimes used in salt-rheum, and upon painful tumors and ulcers. A pillow stuffed with hops, dipped in hot water, and placed under the head of the patient, relieves pain and procures sleep.

Lupulin is the yellow powder obtained by threshing the hops, and is preferable to the hop itself. It is a powerful antaphrodisiac, composing the genital organs, and quieting painful erections, in gonorrhœa, etc.

Preparations.—Fluid extract, dose, half a dram to a dram; solid extract, dose, five to fifteen grains; tincture, two and half ounces to one pint of alcohol, dose, three to five drams; infusion, four drams to one pint of water, dose, two to three ounces; lupulin, dose, six to eight grains; tincture of lupulin, two ounces to one pint of alcohol, dose, one to two drams, in sweetened water; fifteen to twenty grains of lupulin, well rubbed up with white sugar in a mortar, is very efficacious in priapism, chordee, and spermatorrhœa.

Horsemint (*Monarda Punctata*). — This well-known plant, which is common to the United States, is stimulant, carminative, and diuretic. A warm infusion may be used in flatulence, nausea, and vomiting. If the body be kept cool while taking it, it will act as a diuretic. The oil of horsemint is used for similar purposes with the plant Dose, from two to five drops on sugar. Dose of the essence, from ten to twenty drops in sweetened water. The oil is frequently used as an ingredient in liniments.

Horseradish (*Cochlearia Armoracia*). — The fresh root of this well known perennial is stimulant, diuretic, antiscorbutic, and rubefacient. It is useful in rheumatic, paralytic, scorbutic, dropsical, and dyspeptic affections. It is said that a warm infusion of the fresh root in cider, drunk freely every night, will cause perspiration and a free flow of urine, and will consequently cure dropsy. The fresh root grated in vinegar, and eaten with meat at dinner, strengthens the stomach and promotes digestion.

Houseleek (*Sempervivum Tectorum*). — The bruised leaves of this perennial form a cooling application to burns, stings of insects, erysipelas, and other inflammations; valuable also for ringworm, shingles, and other skin diseases.

Hydrangea (*Hydrangea Arborescens*). — This grows abundantly in the Southern, Middle, and Western States. Its root is medicinal. It is diuretic, and has been much praised for its power of relieving the excruciating pain caused by the passage of stone through the urethra, as well as for infallibly removing such stones from the bladder, provided they are not already too large for passage through the water-pipe. A concentrated decoction or the fluid extract may be taken in teaspoonful doses several times a day, — care being taken not to push the medicine to the extent of dizziness or oppression of the chest.

Hyssop (*Hyssopus Officinalis.*) — This is a native of the continent of Europe, and is cultivated in this country. The tops and leaves are the parts used. They are stimulant, aromatic, carminative, and tonic. The infusion has been much employed in chronic bronchitis of old people, and those of debilitated habits. It makes the raising of mucus more easy. The infusion may be combined with sage and alum, and sweetened with honey. The fresh leaves bruised, and applied externally, relieve the pain and disperse the spots and marks caused by contusions.

Iceland Moss (*Cetraria Islandica*). — This plant is found in the northern latitudes, both of the old and new world, and is abundant on the mountains and in the sandy plains of New England. It received its name from its prevalence in Iceland, in which country, as well as in Lapland, it serves, in consequence of the gum and starch it contains, as food for the inhabitants. It is demulcent, tonic, and nutritious, and is well fitted to relieve affections of the mucous membranes of the lungs and bowels, connected with debility of the digestive organs; it is given therefore in chronic bronchitis and other affections of the chest, attended with copious expectoration, especially when the matter discharged is purulent; also in dyspepsia, chronic dysentery, and diarrhœa. It is usually employed in the form of decoction; and is much used in the common article of diet called blanc-mange.

Ice-Plant (*Monotropa Uniflora*). — This perennial plant, found in various parts of the country, is snow-white, resembling frozen jelly, and is juicy and tender, dissolving in the hands like ice. The flowers are in shape like a pipe; hence it is called the pipe-plant. The root is the medicinal part, and is tonic, nervine, and antispasmodic. It has also been considered sedative and diaphoretic; and the powder has been sometimes used in the place of opium. It is said to be valuable in epilepsy, chorea, and other spasmodic affections. Dose of the powdered root, from thirty to sixty grains, two to three times a day.

Indian Hemp (*Apocynum Cannabinum*). — This perennial plant resembles bitter-root, and grows in similar situations. The root is powerfully emetic, and in decoction, diuretic and diaphoretic. It diminishes the frequency of the pulse, and produces drowsiness. It has great efficacy in dropsy.

Preparations. — Fluid extract, dose, as a tonic, five to ten drops; as an emetic, twenty to twenty-five drops; solid extract, dose, one to three grains; tincture, dose, one to two drams, as a tonic, half an ounce to an ounce, as an emetic; infusion, half an ounce to a pint of water; dose, half an ounce to an ounce.

Indian Turnip (*Arum Triphyllum*). — This is a perennial plant, growing in damp places in North and South America, and known by the name of dragon-root. The root when chewed is excessively acrid, producing a biting sensation which may be somewhat relieved by milk. The fresh root is acrid, expectorant, and diaphoretic, and has been used in asthma, whooping-cough, chronic bronchitis, chronic rheumatism, and colic, and externally in scrofulous tumors, scald head, and other skin disorders. Dose of the grated root, in syrup or mucilage, ten grains, three or four times a day.

Iodine (*Iodinum*). — This is prepared from the ashes of kelp, or sea-weed, and is in small bluish-black, shining scales. It is alterative, tonic, and somewhat diuretic. It has been chiefly employed in diseases of the absorbent and glandular system, particularly scrofula, goitre, and glandular tumors generally. Dose, in substance, half a grain, two or three times a day, in form of pill; in form of tincture, three to five drops.

Iodide of Potassium (*Potassii Iodidum*). — This is one of the preparations of iodine, and is sometimes improperly called *hydriodate of potassa.* It is formed by decomposing the iodide of iron by carbonate of potassa. It is used for the same purposes as iodine, but chiefly as an alterative in tertiary syphilis, for which it is a specific; also in some forms of chronic rheumatism, and in leprosy. Dose of the salt, from two to fifteen grains. It is much combined with bitter tinctures, and particularly with the compound preparations of sarsaparilla, yellow dock, and queen's-root. The acids and metallic salts are incompatible with it.

Ipecacuanha. — This is a small perennial plant, growing in moist woods, in several countries of South America. The root is the part used. It is a very valuable emetic, in large doses; in smaller doses, it is sudorific and expectorant. Used to produce vomiting in the commencement of fevers, inflammatory diseases, swelled testicles, and before the paroxysms of ague; and to excite nausea in dysentery, asthma, whooping-cough, various hemorrhages, and inflammation of the lungs; and, combined with opium, to produce diaphoresis in rheumatism, gout, and febrile complaints. Dose, as an emetic, from fifteen to thirty grains; to excite nausea, from one to three grains; and to produce diaphoresis, two to six grains, with one grain of opium.

Preparations. — Fluid extract, dose, as an expectorant, five to eight drops; as an emetic, half a dram to a dram; tincture, half an ounce to an ounce; wine of ipecac, three ounces to one pint of sherry wine, dose, a quarter to half a dram, as an expectorant; two and a half to three drams as an emetic. The following is a useful expectorant for young children: fluid extract of ipecac, two drams; syrup of tolu, five drams; mucilage of gum-arabic, one ounce; sherry wine, three drams, — mix. Dose, one dram.

Iron (*Ferrum*). — As this is the most abundant, so is it the most useful of all the metals. It is widely diffused through the mineral, the vegetable, and the animal kingdoms. It is an essential constituent in the blood of man, and as a medicine it has great value, being a powerful tonic. In most cases where the blood is thin and reduced, iron is our best remedy; it raises the pulse, promotes the secretions, and gives color, body, and nutritive qualities to the blood. It is much used, in some one of its prepared forms, in chronic anæmia, chlorosis, hysterics, whites, rickets, chorea, dyspepsia, neuralgia, and particularly consumption. Care should be taken in using the various preparations of iron, not to let the remedy touch the teeth. It is well to take them, when not in pill form, through a glass tube. The following are most of the chemical preparations of iron used in medicine: —

Ammonia-Citrate of Iron (*Ferri Ammonio Citras*). — This is in the form of thin scales, of a beautiful garnet-red color, and has a slightly acid taste. It is very soluble in water. Its great solubility gives it some advantage over the citrate. The dose is five grains, three times a day, in solution.

Black Oxide of Iron (*Ferri Oxidum Nigrum*). — This is a dark, grayish-black powder, unchangeable in the air, and having magnetic properties. It is a valuable chalybeate, and may be given in five to ten-grain doses.

Citrate of Iron (*Ferri Citras*). — This is a valuable preparation of iron. It is soluble in water. Usually given in the form of pill, in two to three-grain doses, three times a day.

Citrate of Iron and Quinia (*Ferri et Quiniæ Citras*). — In the form of shining scales, garnet-colored, and soluble in water. An excellent antiperiodic and tonic. Given in intermittents, when the blood is low, etc. Dose, five to eight grains, two or three times a day.

Citrate of Iron and Strychnia. — It is a valuable preparation, and combines the properties of iron and strychnia, and has proved an efficacious remedy in atonic dyspepsia, absence of the menses, St. Vitus's dance, green-sickness, hysterics, etc. It is a beautiful salt, looking like citrate of iron, except that it is a little darker. Three grains of the iron are combined with one-sixteenth of a grain of strychnia.

Hydrated Oxide of Iron (*Ferri Oxidum Hydratum*). — This is in a reddish-brown, moist mass, not much used in medicine, except as an antidote to the poison of arsenic, for which it is very valuable. It should be given in tablespoonful doses, often repeated.

Iodide of Iron (*Ferri Iodidum*). — The iodide of iron is a crystalline substance, of a greenish-black color and styptic taste. It has tonic, alterative, diuretic, and emmenagogue properties. It is employed chiefly in scrofulous complaints, swelling of the glands of the neck, chlorosis, absence of the menses, and leucorrhœa. In obstinate syphilitic ulcers, and in secondary syphilis, occurring in scrofulous and debilitated subjects, it has been used with success. Dose, three grains, gradually increased to five. It should never be given in the form of a pill, but preferably in combination with simple syrup (see Syrup of Iodide of Iron).

Lactate of Iron (*Ferri Lactas*). — This has the general medicinal properties of the ferruginous preparations. It increases the appetite in a marked degree, and has been used with decided benefit in chlorosis. Dose, one to two grains, three times a day. The dose may be gradually increased. Given in the form of solution, pill, or lozenge.

Phosphate of Iron (*Ferri Phosphas*).—This is a slate-colored powder, insoluble in water. It is a valuable remedy in consumption, cancer, and nervous diseases, accompanied by a low state of the blood. Dose, one or two grains, three times a day.

Persalt of Iron (*Monsel's Styptic*).—This is a most valuable styptic, and is used with success in restraining violent bleedings. It produces no irritant effects upon the tissues, and may be used with safety both in slight and extensive surgical operations. Physicians should have it by them, and will find it very serviceable in sudden emergencies of bleeding. It is prepared in solution and in the form of dry salt. The solution is the most convenient and eligible form, and may be applied as prepared.

Powder of Iron (*Ferri Pulvis*).—This is what is often called iron by hydrogen, or Quévenne's iron. It is an impalpable powder, and of an iron-gray color. If black, it is worthless. It is used in anæmia, and in all those conditions characterized by deficiency of coloring-matter in the blood. The best metallic iron for medicinal use. Dose, from two to five grains, several times a day; to be given in the form of pill.

Precipitated Carbonate of Iron (*Ferri Subcarbonas.*)—This is a reddish powder, insoluble in water. It is tonic, alterative, and emmenagogue, and is used in neuralgia, chorea, chlorosis, anæmia, epilepsy, scrofula, etc. Dose, five to twenty grains, three times a day, to be taken in a little water.

Protoxide of Iron (*Ferri Protoxidum*).—This is of a dark-blue color, and has a tendency to absorb oxygen from the air, which converts it into the sesquioxide. It is a valuable preparation of iron. Dose, from two to five grains, three times a day.

Solution of Protoxide of Iron.—The protoxide of iron is more readily absorbed and assimilated, and agrees better with the stomach than any other preparation of this metal. It is prepared in the form of a syrup, of which the dose is from one to two teaspoonfuls, three times a day.

Solution Protoxide Iron, with Rhubarb and Colombo.—This is a composition of protoxide of iron with vegetable tonics. As a remedy in many forms of dyspepsia, it must prove of great value.

Solution Protoxide Iron, with Quinine.—This has become a remedy of established reputation. Quinine combined with iron, particularly with the protoxide, must have great advantages as a chalybeate tonic. Each tablespoonful contains half a grain of quinine.

Solution Protoxide of Iron, with Iodide of Potassa. — In this preparation the valuable alterative properties of iodide of potassium are connected with iron. It is therefore alterative and tonic, and may be used in scrofulous and other weakened conditions of the system. It is a remedy of decided merit. Three grains of the iodide of potassium are contained in each tablespoonful.

Sulphate of Iron (*Ferri Sulphas*). — This is in the form of transparent crystals, of a pale, bluish-green color, and efflorescent in the air. It has a styptic taste, and is soluble in about twice its weight of cold water, but insoluble in alcohol. It is astringent and tonic. In large doses it produces nausea and griping of the bowels. Useful in scrofula and as an astringent in passive hemorrhages, sweats, diabetes, chronic mucous catarrh, leucorrhœa and gleet. As a tonic it is useful in dyspepsia.

Syrup of Iodide of Iron (*Syrupus Iodidi Ferri*). — This is an elegant preparation of iodine and iron, and is given in all debilitated conditions of the system, when there is a taint of scrofula. Dose, from twenty to sixty drops, well diluted, at the moment of taking, with water.

Syrup of Iodide Iron and Manganese. — This is of a light straw-color, prepared from protosulphate of iron, protosulphate of manganese, and iodide of potassium. It is a remedy of unsurpassed efficacy in anæmic, scrofulous, syphilitic, and cancerous affections. It is considered superior to the syrup of iodide of iron. Dose, from ten to thirty drops.

Tartrate of Iron and Potassa (*Ferri et Potassæ Tartras.* — This is in the form of beautiful shining scales, of a dark ruby color, of a slightly chalybeate taste, and very soluble in water. It is one of the mildest of the salts of iron, and is considerably used in scrofula, weakness of the bowels, general debility, etc. It is much used as a remedy for syphilis, both externally and internally. The dose is ten to twenty-five grains in solution.

Tincture of Muriate of Iron (*Tinctura Ferri Chloridi*). — This has a reddish-brown, yellowish color, a sour and very styptic taste, and an odor like muriatic ether. It is one of the most active and certain preparations of iron, generally agreeing with the stomach, and much employed for purposes for which iron is used. It is useful in scrofula, gleet, and leucorrhœa; also in hemorrhages from the womb, kidneys, and bladder, of a passive character. Dose, from ten to twenty-five drops, gradually increased to one or two drams, two or three times a day. It should be given diluted with water.

Valerianate of Iron. — This salt is in the form of a dark-red powder, having a faint odor, and a taste of valerianic acid. It is soluble in alcohol, and insoluble in water. Given in hysterical affections, complicated with chlorosis. Dose, one grain, several times a day.

Isinglass (*Ichthyocolla*). — A gelatinous substance, prepared from the bladder of fishes. It is soluble in alkaline solutions and diluted acids. In boiling it dissolves and forms a jelly upon cooling, in which form it is chiefly used as a nutritive diet for the sick.

Jalap (*Ipomœa Jalapa*). — This is a Mexican plant. Its root is an active cathartic, producing liquid stools, more or less griping. United with cream of tartar it becomes a hydragogue, and is useful in dropsy. The dose is from fifteen to twenty-five grains.

Preparations. — Fluid extract, dose, a quarter to one dram; solid extract, dose, three to five grains; tincture, two ounces to the pint of diluted alcohol, dose, one to two drams; jalapin, the active principle, dose, one to two grains.

Juniper (*Juniperis Communis*). — This evergreen shrub is a native of Europe, and is naturalized in some parts of this country. The berries, which are the parts used, are wrinkled, of a dark-purple color, about the size of a pea. They are gently stimulant and diuretic, and have been used in scurvy and inflammation of the bladder, chiefly in connection with more active diuretics. The oil of juniper obtained from the berries is used for similar purposes. Five minims of the oil mixed with one fluid dram of sweet spirits of nitre, and given three times a day, is valuable in dropsy. Dose of the berries, from one to two drams; of the oil, from five to ten drops.

Kino. — This is the hardened juice of an East Indian tree, *Pterocarpus Marsupium.* There are several varieties of it. It is a powerful and valuable astringent, and is much used in diarrhœa, not attended with inflammation. Opium is often united with it, and it is a favorite addition to chalk-mixture. It is also used in chronic dysentery, leucorrhœa and diabetes. It may be used in the form of powder, infusion, or tincture. Dose of the powder, ten to twenty grains; of the tincture, one or two fluid drams; the infusion is useful as an injection in leucorrhœa and gonorrhœa. The powder is sometimes sprinkled with advantage on indolent and flabby ulcers.

Ladies' Slipper (*Cypripedium Pubescens*, Fig. 218). — The fibrous roots are the parts used of this plant. It is tonic, nervine, and anti-spasmodic, and is employed in nervous headache, and other nervous affections, as excitability, hysterics, neuralgia, etc.

Preparations. — Fluid extract, dose, half a dram to a dram; solid extract, dose, five to ten grains; tincture, two ounces to a pint of diluted alcohol, dose, half an ounce; cypripedin, the active principle, dose, two to three grains. The following is a useful preparation for producing sleep, in wakeful and excited conditions: fluid extract ladies' slipper, one ounce; fluid extract pleurisy root, one ounce;

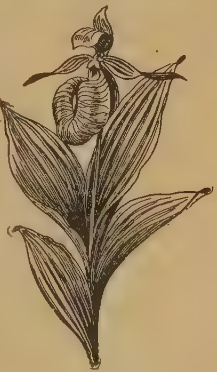


FIG. 218.
LADIES' SLIPPER.

fluid extract skunk-cabbage, one ounce; fluid extract, scullcap, one ounce; mix; dose, half a dram to a dram, three times a day.

For sick and nervous headache, dependent on an acid stomach, the following is useful: fluid extract ladies' slipper, half an ounce; fluid extract catnip, half an ounce; fluid extract scullcap, half an ounce; water, one pint; mix; dose, one and a half to three drams.

Lead (*Plumbum*). — Lead acts upon the system as a sedative and astringent. Internally, it is used for the purpose of reducing the force of the circulation, and for restraining improper bleeding and other excessive discharges. Externally, it is employed to subdue inflammation. It should not be excessively used, for, if taken internally for a long time, it injures the nervous system, and brings on apoplexy, palsy, and particularly lead colic. Nature generally gives notice when it is doing mischief, by drawing a *blue line around the edge of the gums.* The preparation of lead chiefly used in medicine is the following: —

Acetate of Lead (*Plumbi Acetas*). — This is known by the name of *sugar of lead* and is a white salt, crystallized in brilliant needles. It has first a sweetish, and then an astringent taste. In medicinal doses, it is a powerful sedative and astringent; in large ones an irritant poison. It is principally used internally for bleeding from the lungs, bowels, and womb. The dose is generally two grains, united with half a grain to a grain of opium, in the form of pill. Externally, it is employed in form of solution and applied to inflamed surfaces with cloths. Four grains of sugar of lead and four of pulverized opium to the pint of water, make a good lotion for various purposes.

Lemon (*Citrus Limonum*). — This is a well-known tropical fruit, the juice of which has a grateful acid taste, and is much used in fevers and inflammatory complaints, forming the agreeable drink called lemonade. The oil of lemon, obtained from the fresh rind of the fruit, is chiefly used in perfumery, and to render the taste of medicines more agreeable.

Lettuce (*Lactuca Sativa*). — The medicinal properties of this garden-plant are contained in the milk. It is given when opium disagrees with the patient, to allay cough and irritability. It is one of the most wholesome vegetables for the table.

Preparations. — Fluid extract, dose, half a dram to two drams; solid extract, dose, two to five grains. The following is a useful compound syrup: fluid extract lettuce, two ounces; fluid extract poppy, four ounces; simple syrup, ten ounces; mix; dose, half a dram to a dram.

Life-Root (*Senecio Aureus*). — This is a perennial plant, growing on the banks of marshy creeks in the Northern and Western States, and sometimes called *ragwort.* Both the root and herb are diuretic, pectoral, diaphoretic, and tonic, considerably valued as a remedy in gravel and other urinary affections, particularly strangury. It is useful for promoting menstrual discharges.

Preparations. — Fluid extract, dose, half a dram to a dram; infusion, dose, one to three ounces; senecin, the active principle, dose, three to five grains. For chlorosis, accompanied by absence of the menses, the following is a useful preparation: senecin, aletrin and sulphate of iron, four grains each. Mix and divide into two-grain powders. Six grains each of senecin and geraniin, mixed and taken in doses of two to four grains, has a good effect in restraining an immoderate flow of the menses. In painful menstruation, the following is a good pill: senecin, two grains; quinine, six grains; solid extract belladonna, three grains; make into ten pills, and take one every three hours till the pain is subdued.

Lime (*Calx*). — This is one of the alkaline earths, and is an abundant natural production. It is used in several forms in medicine, of which the following are the chief: —

Chloride of Lime (*Calx Chlorinata*). — This is a moist, grayish-white substance, having the odor of chlorine, and possessing powerful bleaching properties. Externally used, it is disinfectant, and, dissolved in water, is applied with advantage to ill-conditioned ulcers, burns, chilblains and eruptions of the skin; also as a gargle in putrid sore throat, and as a wash for ulcerated gums, and to purify the breath. It has been used with advantage in dysentery, both by mouth and injection, to correct the fetor of the stools.

Lime-Water (*Aqua Calcis*). — This is made by dissolving four ounces of lime in a gallon of water, and letting the solution stand in a covered vessel, and pouring off the clear liquor when it is wanted for use. It is antacid, antilithic, tonic, and astringent, valuable in all complaints attended with acidity of the stomach. United with milk, and used as the sole diet, it is sometimes the only remedy for chronic diarrhœa of long standing. Dose of lime-water, half an ounce to an ounce.

Liquorice (*Glycyrrhiza Glabra*). — This grows in the south of Europe and Asia. The root is the part used. It is demulcent and expectorant, and is useful in cough, chronic bronchitis, and irritations of the mucous surfaces generally. The pulverized root united with an equal amount of sulphur and a little molasses, is a valuable preparation for coughs. The black extract may be used for the same purposes as the root.

Liverwort (*Hepatica Americana*). — An indigenous plant, growing in woods, upon the sides of hills and mountains. The leaves withstand the cold of winter, and the flowers appear early in the spring. The whole plant is medicinal. It is a mild demulcent tonic and astringent, and has been used in fevers, liver-complaints, bleeding from the lungs, and coughs.

Preparations. — Fluid extract, dose, two to three drams; infusion, four ounces to the pint of water, to be taken freely.

Lobelia (*Lobelia Inflata*, Fig. 219). — This weed grows throughout the United States; both its seeds and leaves are used in medicine. The plant is emetic, expectorant, sedative and antispasmodic. As an emetic it is generally used in combination with other articles for that purpose. It is of great advantage in spasmodic asthma, as well as in bronchitis, croup, whooping-cough, and other throat and chest affections. Whenever relaxation is required to subdue spasm, or for other purposes, lobelia will be found useful.

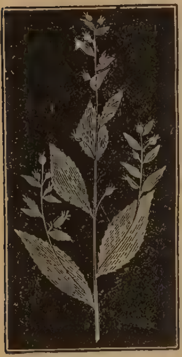


FIG. 219. LOBELIA

Preparations. — Fluid extract, dose, as an expectorant, ten to fifty drops; as an emetic, one-fourth of a dram to a dram; tincture, two ounces to a pint of diluted alcohol, dose, as an expectorant, one to three drams, as an emetic, half an ounce; infusion, dose, an ounce every half hour till vomiting ensues; lobelin, the active principle, dose, half a grain to a grain and a half. The following mixture will be found excellent, as an expectorant and sudorific in spasmodic croup, whooping-cough and asthma, and for subduing mucous inflammation about the throat and air-passages: tincture of lobelia, half an ounce; tincture of bloodroot, two ounces; oil of spearmint, half a dram; empyreumatic syrup, five ounces; dose, half a dram every two hours. A poultice made of lobelia, elm-bark and weak lye, relieves sprains, bruises, rheumatic pains, erysipelatous inflammations and poison from ivy or dogwood.

Logwood (*Hæmatoxylon Campechianum*). — This tree is a native of tropical America. The wood is used in medicine. It is tonic and astringent, and is used with advantage in diarrhœa, dysentery, and in the relaxed state of the bowels after cholera infantum. Used freely with other treatment, it also benefits constitutions broken down by disease or dissipation.

Preparations. — Fluid extract, dose, half a dram to a dram; solid extract, dose, five to twenty grains; infusion, half an ounce to a pint of water, dose, four drams every three or four hours, in diarrhœa.

Magnesia (*Magnesia Usia*). — Calcined magnesia is obtained from carbonate of magnesia, by exposure to a strong heat. It is a white, inodorous, light powder, of a feeble alkaline taste. It is antacid and laxative, and is much used in dyspepsia, sick headache, gout, and in other complaints attended with sour stomach and costiveness; likewise a favorite remedy in complaints of children. Dose, as a laxative, from thirty to forty grains; as an antacid or antilithic, ten to twenty-five grains, once or twice a day.

Carbonate of Magnesia (*Magnesiæ Carbonas*). — This is prepared from sulphate of magnesia, by carbonate of soda. It is antacid, and when it meets with acid in the stomach and bowels it is laxative.

Sulphate of Magnesia (*Magnesia Sulphas*). — Obtained from sea-water. This is the well-known *Epsom salts* and is purgative and diuretic. Used in all cases which require purgatives. It generally operates without griping, and, when united with an acidulated infusion of roses, will remain on the stomach when all other things are rejected. The less it is diluted the better and more easily it operates, provided a draught of warm water be taken an hour afterwards. It may be made to act as a diuretic by keeping the skin cool, and walking about after it has been taken.

Male Fern (*Aspidium Filix Mas*). — This perennial plant is found in both Europe and America, also in Asia and northern Africa. The root, which is the medicinal part, should be gathered during summer, as the active principle is more abundant at that season than any other. It is also said to deteriorate by age, and become nearly worthless in two years. It is slightly tonic and astringent, but its chief value consists in its power to destroy and expel the tapeworm.

Preparations. — Solid extract, dose, nine to twelve grains. The following compound pills are adapted to the destruction of the tapeworm: solid extract male fern, two scruples; gamboge, fourteen grains; calomel, fourteen grains; scammony, eighteen grains. Mix, and divide into twenty pills. Dose, two to three pills.

Mandrake (*Podophyllum Peltatum*, Fig. 220). — This is exclusively an American plant. The root is the medicinal part. It is cathartic, alterative, anthelmintic, hydragogue, sialagogue, and, in large doses, emetic. It stimulates and quickens the action of the liver and kidneys, promotes expectoration and determines the blood to the surface. Combined with cream of tartar, it produces watery stools and is useful in dropsy. It is used in jaundice, dysentery, diarrhœa, bilious, remittent, and intermittent fevers, puerperal fever, typhoid fever, and all glandular enlargements. But it has a more particular action upon the liver, and is especially useful in derangements of that organ.

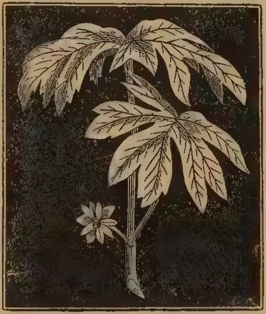


FIG. 220. MANDRAKE.

The severity of its action seems to be the only objection to its very extensive use. Its harshness, however, may be much lessened by its combination with alkalies, ginger, or caulophyllin.

Preparations. — Fluid extract, dose, half a dram to a dram; compound fluid extract, dose, one to two drams; solid extract, dose, three to twelve grains; tincture, three and a half ounces to one pint of alcohol, dose, one to three drams; podophyllin, the active principle, dose, as an alterative, one-eighth to a quarter of a grain; as a cathartic, one to two grains.

Manna. — This is the concrete juice of the tree called *Ornus Europœa*, growing in Sicily, Calabria, and Apulia, as well as of several other species of tree. Manna is a gentle laxative, operating mildly, though sometimes producing wind and pain. It is considerably used as a gentle physic for children and women in the family way. The usual way of prescribing it is in connection with senna, rhubarb, magnesia, or the neutral salts. Being sweet, it conceals the taste of these remedies in some measure, while it adds to their purgative effect. Dose of manna, for a grown person, from one to one and a half ounces; for a child, from one to four drams, according to age.

Marsh-Rosemary (*Statice Caroliniana*). — This plant grows on the coast from Maine to Georgia. The root of it is the medicinal part. A decoction of it is much used in diarrhœa, dysentery, etc., also, as a gargle in ulcerated sore mouth and the throat affection of scarlet fever, and as an injection in gleet, whites, and falling of the womb and bowel. Dose of the decoction, one or two tablespoonfuls every hour or two.

Marshmallow (*Althœa Officinalis*, Fig. 221). — A perennial plant, growing in salt marshes and other moist places in Europe. The root is the medicinal part, and its properties are those of a demulcent. A decoction of it is used in irritations and inflammations of mucous membranes, as in inflammation of the lungs, stomach, bowels and bladder, and some affections of the kidneys. The powdered root, and also the leaves and flowers, are sometimes employed in the form of poultice.

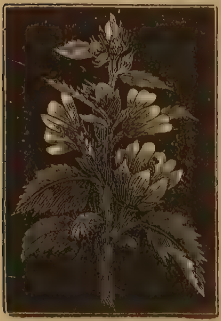


FIG. 221.
MARSHMALLOW.

Mastic. — This is the hardened gum or resin which flows from incisions in the small tree or shrub *pistacia lentiscus*, growing upon the borders of the Mediterranean. It is not much used in medicine, but is chiefly employed in manufacturing a brilliant varnish. I introduce it here principally for the purpose of recommending the following use of it in carious teeth, — particularly in those new parts of the country where dentistry is not much known. Dissolve, in a well-stopped bottle, four parts of mastic in one part of sulphuric ether. Saturate with this solution a small piece of cotton of the size of the cavity in the tooth, and then, having cleansed and dried the cavity, gently press the cotton into it. The ether will soon evaporate and leave the gum to attach itself to the sides of the tooth, and protect its inner surfaces from the action of the air and food.

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Iceland Moss

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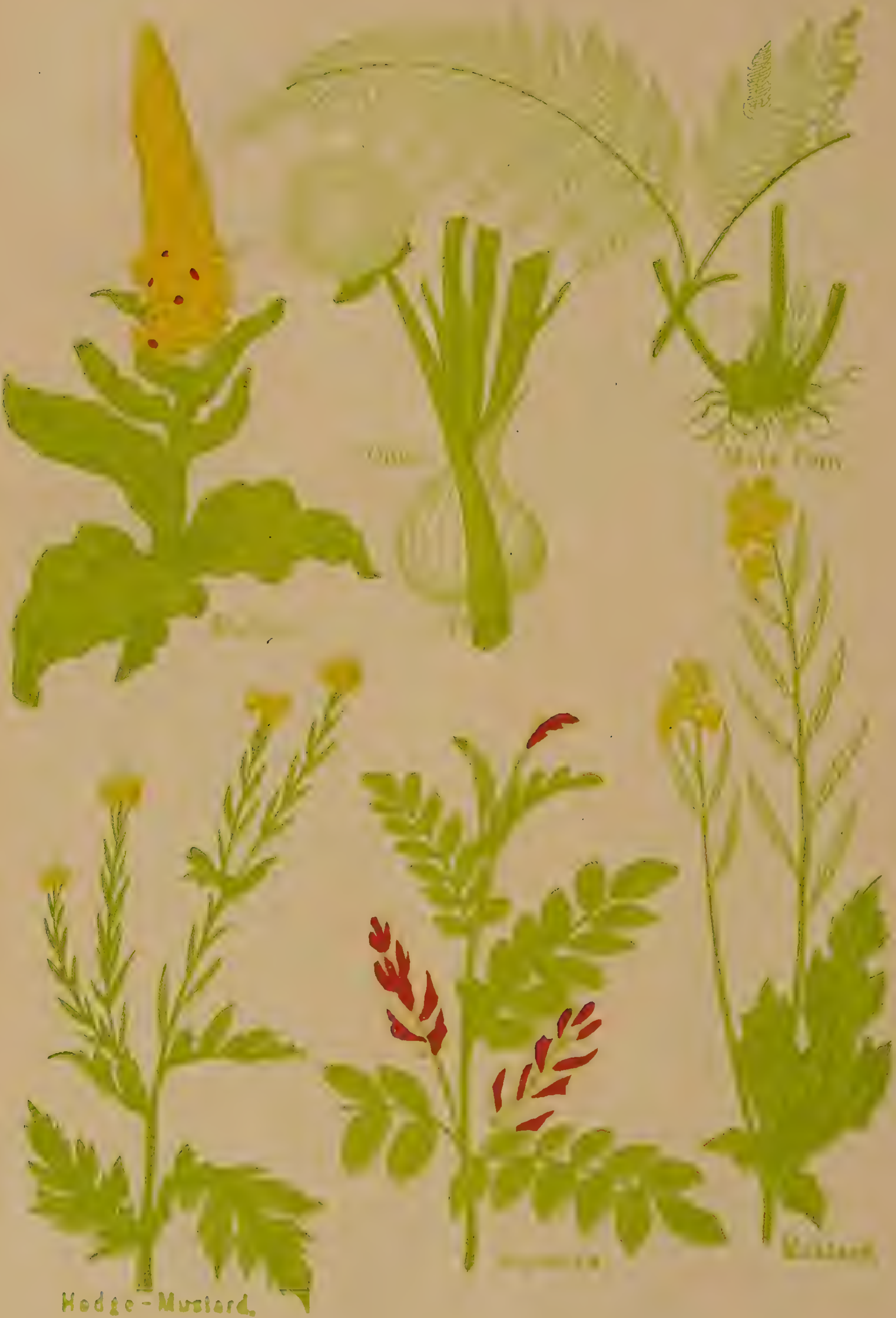

Onion
Male Fern
Mustard
Hedge-Mustard

Matico (*Piper Angustifolium*). — The leaves of this plant are styptic and somewhat stimulant and tonic. The leaves brought in contact with a bleeding wound, have considerable power to arrest the flow of blood.

Preparations.— Fluid extract, dose, half a dram to a dram; tincture, four ounces to a pint of diluted alcohol, dose, two drams to one half ounce; infusion, half an ounce to a pint of water, dose, one to one and a half ounces.

Meadow-Saffron (*Colchicum Autumnale*, Fig. 222). — This is a native of the temperate parts of Europe, where it grows wild in moist meadows. The roots and seeds are used. Colchicum is justly regarded as a valuable remedy in gout and rheumatism, in which it is much and chiefly used. It is thought, also, to act upon the nervous system, allaying pain and producing other sedative effects. When not carried off by the bowels, it produces sweating, and is occasionally diuretic and expectorant. Dose of the dried root, from two to eight grains.

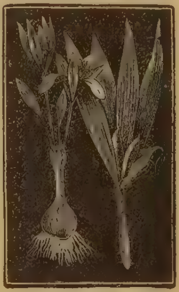


FIG. 222.
MEADOW-SAFFRON.

Preparations. — Fluid extract of root, dose, three to ten drops; fluid extract of seeds, dose, five to ten drops; tincture, four ounces to twelve ounces diluted alcohol, dose, ten drops to half a dram; syrup, two ounces to fourteen ounces simple syrup, dose, one third of a dram to a dram; wine, three ounces of root to a pint of sherry wine, dose, twenty-five to thirty-five drops.

Monkshood (*Aconite*). — This is anodyne, sedative and diaphoretic. The leaves and roots are generally used separately. It is useful in inflammatory diseases, neuralgia, epilepsy, paralysis, gout, and particularly in fevers.

Preparations. — Fluid extract, dose, two to five drops; solid extract, dose, one quarter of a grain to a grain; tincture, eight ounces of the root to a pint of alcohol, dose, three to five drops.

A preparation composed of one dram of the tincture of aconite-root, and two ounces of the tincture of black cohosh, and taken in doses of one teaspoonful every four hours, has great power in relieving the various forms of neuralgia, and also chronic rheumatic pains, particularly among old people.

For nervous headache, irritability, restlessness and wakefulness, the following combination of aconite is useful:—

Solid extract of aconite, half a dram; solid extract of stramonium, four grains; valerianate of quinia, one scruple. Mix and divide into sixty pills, of which one is to be taken every two, three, or four hours, according to symptoms.

Motherwort (*Leonurus Cardiaca*).— This perennial plant is supposed to be a native of Tartary, and introduced into this country. It is considerably used in domestic practice for nervous complaints and many chronic disorders attended with restlessness, disturbed sleep, pains of the nerves, and affections of the liver. A warm infusion of the tops and leaves is useful in restoring menstrual suppression from colds.

Preparations.—Solid extract, dose, three to five grains. Combined with blue cohosh and skunk-cabbage, the solid extract is a nervine, antispasmodic and emmenagogue.

Mountain Laurel (*Kalmia Latifolia*, Fig. 223).—The laurel is found in most parts of the United States, on hills and mountains, flowering in June and July, and is very ornamental. It is sometimes called *big ivy, or calico-bush.* The *narrow-leaf laurel*, or *sheep-laurel*, *kalmia angustifolia*, is also common, and similarly medicinal. The leaves of these plants are used in medicine, and produce, when taken in large doses, vertigo, dimness of sight, etc. In medicinal doses, they are sedative and astringent. The saturated tincture is the best form of administration, which may be taken in ten to fifteen-drop doses, every two or three hours, in syphilis, active hemorrhages, hypertrophy of the heart and jaundice.

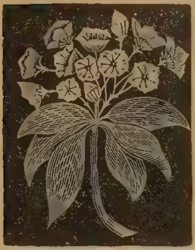


FIG. 223.
MOUNTAIN LAUREL.

Mullein (*Verbascum Thapsus*).—The leaves and flowers of this biennial plant are antispasmodic, diuretic and demulcent. The infusion is frequently used in domestic practice, and is useful in colds, coughs, bronchitis, etc.; and may be drunk freely. The leaves are sometimes boiled in milk, sweetened, and taken for bowel complaints. The leaves dipped in hot vinegar and water are very useful applied as a fomentation in mumps, acute inflammation of the tonsils and malignant sore throat; a handful of them may also be placed in a teapot with hot water, and the steam be inhaled through the spout, in the same complaints.

Mustard.—The seeds of the white mustard, *Sinapis alba*, were a few years ago much recommended as a cure for constipation of the bowels; and, swallowed whole in teaspoonful, or even, in some obstinate cases, in tablespoonful doses, they afford a wholesome stimulus to the bowels, and accomplish some good. The ground mustard is a valuable condiment to eat in small quantities, at dinner, in dyspeptic cases. It finds its most important uses, however, as a prompt and almost instantaneous emetic in cases of poisoning, and also as a valuable counter-irritant, when applied externally. The *volatile oil of mustard*, one part, and ten parts of sweet oil, may be applied to the skin instead of the mustard poultice, and with similar results.

Myrrh.—The tree *Balsamodendron myrrha*, growing in Arabia, etc., yields a juice which hardens into a gum-resin, called myrrh. This pleasant, aromatic gum is stimulant, tonic, antiseptic, emmenagogue and expectorant. It is employed in chronic bronchitis, consumption, chlorosis, absence of the menses, etc. It is generally combined with iron and other tonics, and in amenorrhœa it is frequently combined with aloes. Locally, it is considerably used as a wash to improve spongy gums, ulcers of the mouth, etc. The dose is from ten to twenty grains, to be given in pill or in powder suspended in water. The tincture of myrrh is a useful external application.

Naphtha. — This belongs to the class of native inflammable substances, called bitumens. It is a transparent, yellowish white, very light and inflammable liquid, and is found abundantly in Persia. Said to have been used with advantage in Asiatic cholera. It is composed exclusively of carbon and hydrogen. Dose, from ten to twenty drops, given in half a glass of wine or mint-water. During the formation of coal-gas, an artificial naphtha is obtained, which, when purified, has the property of dissolving India rubber.

Medicinally, it is chiefly used for purposes of inhalation in affections of the chest.

Naphthalin. — This is obtained from a distillation of coal-tar. Is is soluble in ether, alcohol, naphtha and oils, but not in water. It it an excellent expectorant, particularly in cases of impending suffocation of old persons from chronic bronchitis; also in asthma and other pectoral affections. Being stimulating, it is improper in acute bronchitis, and pulmonary inflammation. The dose is from ten to twenty-five grains, given in emulsion, or syrup, every fifteen minutes, until abundant expectoration takes place. A scruple of naphthalin mixed with five drams of lard, makes a good ointment for psoriasis, dry tetter and leprosy.

Nitrate of Silver (*Argenti Nitras*). — Nitrate of silver is a solution of silver in nitric acid, and commonly passes under the name of lunar caustic. It is both in the form of small cylindrical rods and of crystals, the latter being more pure than the former.

As an internal remedy, nitrate of silver is tonic and antispasmodic and is given chiefly in nervous diseases, as epilepsy, St. Vitus's dance and neuralgia of the heart; also in some forms of dyspepsia, attended with pain in the stomach and vomiting. The dose is from one-fourth to half a grain in the form of pill. It should never be taken regularly as an internal remedy more than two months, as it is apt, after long use, to change the skin to an indelible slate-blue. Use only under the direction of a physician.

But nitrate of silver is most used as an external remedy in pharyngitis, laryngitis, tracheitis and other chronic and acute inflammations of mucous membranes. For reducing these inflammations, it is very nearly a specific; certainly, it is altogether the best remedy we have. It fails in some cases; but when skilfully used it *never* does harm. The solutions to be applied to the throat require to have a strength of from fifteen to a hundred grains to the ounce of soft water. A solution containing one to four or more grains to the ounce of water is often used in inflammations of the eye, gonorrhœa, etc.

Nitre (*Potassœ Nitras*). — Nitre, which also passes under the name of *nitrate of potassa*, and *saltpetre*, is both a natural and artificial production. As a medicine, it is refrigerant, diuretic, and diaphoretic, and is much used in inflammatory diseases. It increases the secretion of urine and sweat, and lessens the heat of the body and the frequency of the pulse. United with tartar emetic and calomel, it forms the well-known nitrous powders, which promote most of the secretions, particularly those of the liver and skin. One of these powders, constituting a dose, to be given every two or three hours, is composed of eight grains of nitre, one-eighth of a grain of calomel, and one-eighth of a grain of tartar emetic. Use with care.

Sweet Spirit of Nitre (*Spiritus Ætheris Nitrici*). — Sweet spirit of nitre is diuretic, diaphoretic, and antispasmodic. It is deservedly much esteemed as a medicine, and is extensively employed in febrile diseases, either alone or in union with tartar emetic, or with spirit of Mindererus. It is often a grateful stimulus to the stomach, relieving nausea and vomiting, and promoting sleep. It acts especially upon the kidneys, augmenting the secretion of urine, and is often given in conjunction with squills, digitalis, and acetate of potassa. The dose is a teaspoonful, given in water every two or three hours.

Nutmeg (*Myristica Moschata*). —The nutmeg is from a tree growing in the Molucca Islands. It is stimulant and carminative, and somewhat used to remove flatulency, as well as to render other medicines palatable; it is most employed, however, to flavor drinks, and articles of diet. In large doses it is poisonous, producing stupor and delirium.

Nux Vomica (*Strychnos Nux Vomica*, Fig. 224). — The tree which produces nux vomica grows in Bengal, Malabar, on the coast of Coromandel, and in other regions. The seeds are the medicinal part.

FIG. 224. NUX VOMICA.

Nux vomica is an emphatic excitant of the brain and spinal cord, and in large doses is an active poison; frequently repeated in small doses, it is tonic, diuretic, and slightly laxative.

Given in full doses, it is apt to produce muscular contraction, as in lockjaw, together with frequent starts and twitches, as if from electric shocks. It is much employed in treatment of paralysis, and is more beneficial in general than in partial palsy.

Preparations. — Fluid extract, dose, two to seven drops; solid extract, dose, half a grain to a grain; tincture, four ounces to the pint of alcohol, dose, five to ten drops; strychnia, commonly called strychnin, the active principle, dose, one-sixteenth to one-eighth of a grain.

Oil of Cajuput (*Oleum Cajuputi*). — This oil is obtained from the leaves of the East Indian tree cajuputi. It is diaphoretic and antispasmodic, and a powerful diffusive stimulant. Given in cramps of the stomach and bowels, colic, flatulency, hysterics, and chronic rheumatism. It is considerably used as an ingredient in liniments, to be applied externally in rheumatism and neuralgia. Dose, from one to three drops, on sugar.

Oil of Turpentine (*Oleum Terebinthinæ*). — This is generally called spirits of turpentine, and is obtained by distilling turpentine. As a medicine it is stimulant, cathartic, diuretic, anthelmintic, and astringent. In large doses it causes strangury and other unpleasant symptoms. The dose is from five to twenty drops, repeated every two or three hours. Fifteen drops, taken every fifteen minutes or half hour, powerfully restrains bleeding from the lungs, and is, perhaps, the best remedy we have for this frightful accident.

It is also very efficacious in checking other hemorrhages. Externally, it is used considerably as an ingredient in liniments and rubefacients, in rheumatism, paralysis, etc. Combined with linseed oil, it is much used for burns and scalds.

Olive Oil (*Oleum Olivæ*). — This oil, often called *sweet oil*, is expressed from the fruit of the olive tree, *Olea Europæa*. It is nutrient and emollient, and, in doses of one to two fluid ounces, laxative. It is much employed as a constituent of cerates, liniments, and plasters.

Onion (*Allium Cepa*). — The medicinal properties of the onion are much like those of garlic. The juice, mixed with sugar, is used to some extent as a remedy for the coughs and colds of infants. Roasted onions, applied as a poultice, hasten the suppuration of boils, tumors. etc. They are also useful, in some cases, applied as drafts to the feet.

Opium. — This is the hardened juice of the unripe seed of the poppy, *Papaver Somniferum*. It is a stimulant narcotic. A moderate dose increases the fulness and frequency of the pulse, augments the warmth of the skin, invigorates the muscular system, quickens the senses, animates the spirits, and gives energy to the mental faculties. Its operation is directed with special force to the brain, which it sometimes excites to intoxication and delirium, which excitement subsides in a short time, and is followed by a delightful calmness and placidity of mind, all care and anxiety being banished, and the thoughts yielded to the control of pleasing fancies. At the end of an hour or more, this reverie is succeeded by sleep, which, at the end of eight or ten hours, passes off, and is followed by headache, nausea, tremors, and other nervous disturbances. Large doses are followed by shorter periods of exhilaration and excitement, and by more protracted sleep.

Opium is used in medicine to produce gentle perspiration, relieve pain, and lessen nervous excitability in all febrile and inflammatory diseases; also as an antispasmodic in hysterics, colic, convulsions, coughs, etc. It should not be used in cases of constipation of the bowels. A solution, composed of two grains of opium to one ounce of water, is sometimes a valuable injection in gonorrhœa and spasmodic stricture. Dose, as a stimulant, one-quarter to one-half a grain; as a narcotic, one to two grains; in some spasmodic affections it is given in very large doses. Use only under the direction of a physician.

Morphia, generally called *morphine*, is one of the alkaloid principles of opium. It is used under the various forms of *sulphate*, *muriate*, *acetate*, and *valerianate* of *morphia*, — all having the general properties of opium, and are given for similar purposes, in doses of one-eighth to one-quarter of a grain. One-sixth of a grain is equal to one grain of opium.

Strong coffee is an excellent antidote to the poisonous effects both of opium and morphia. A solution of morphia may be made by adding ten grains of the salt to one fluid ounce and a half of distilled water, and half an ounce of diluted alcohol, and then adding two drops of sulphuric acid, if it be the sulphate of morphia, or two drops of acetic acid, if it be the acetate of morphia, or two drops of muriatic acid, if it be the muriate of morphia. The effects of morphia may be obtained by sprinkling some of it on a blistered surface.

Orange-Peel (*Aurantii Cortex*). — The orange is the fruit of a tree belonging to the tropical climates. Orange-juice is a pleasant refrigerant, useful in fevers, and particularly in scurvy. Sick persons sucking the juice of the orange, should be careful not to swallow any of the skinny portion, or the peel. The peel of the orange is chiefly employed to give a pleasant flavor to other medicines, and to prevent their nauseating properties. It is a mild tonic, carminative, and stomachic, and improves the bitter infusions and decoctions of gentian, quassia, colombo, and Peruvian bark. Orange-peel should never be given in substance.

Preparations. — Fluid extract, dose, half a dram to two drams; tincture, one ounce and three-quarters to a pint of diluted alcohol, chiefly used as an addition to infusions, etc.; syrup, two ounces fluid extract or tincture to a pint of simple syrup, used with water as an agreeable drink.

Origanum (*Origanum Vulgare*). — A perennial herb growing in Europe and this country. The warm infusion of it causes perspiration, and promotes the menstrual discharge, when interrupted by a cold. The oil of origanum is a very useful ingredient in several stimulant and rubefacient liniments.

Parsley (*Petroselinum Sativum*). — The root of this biennial plant is aperient and diuretic, and is used in dropsy, scarlet fever, and diseases of the kidneys; also in retention of the urine, gonorrhœa, and strangury. The dose of the infusion is from two to three fluid ounces, two or three times a day.

The bruised leaves are applied with advantage to contusions, swelled breasts, and enlarged glands.

Partridge Berry (*Mitchella Repens*). — This perennial evergreen creeping herb grows in dry woods and swampy places throughout the United States, and has white, fragrant flowers in June and July. It is parturient, diuretic and astringent, and is used in dropsy, suppression of urine, and diarrhœa. It acts as a tonic upon the reproductive organs, giving tone and vigor to the womb, and making labor less tedious. Dose of the decoction, from two to three fluid ounces, two or three times a day.

Peach (*Amygdalus Persica*).— The leaves of the peach are sedative and slightly laxative, and are used in inflammations of the stomach and bowels; likewise in irritable bladder, whooping-cough, sickness at the stomach, and dysentery. They are used in the form of cold infusion, a tablespoonful being a dose, to be taken every hour or two. A good tonic is made by adding four ounces of the bruised kernels to a quart of honey.

Pennyroyal (*Hedeoma Pulegioides*, Fig. 225). — Pennyroyal is a gently stimulant aromatic; it relieves wind colic and sick stomach, and qualifies the action of other medicines. Like most aromatic herbs, it has the property, when given as a warm infusion, of promoting perspiration and of exciting the menses when the system is already disposed to the effort. In cases of recent suppression, it may be given at bedtime as a warm tea, after bathing the feet in warm water. The oil of pennyroyal has the properties of the herb.

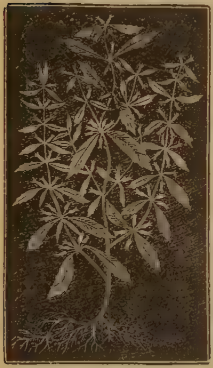


FIG. 225.
PENNYROYAL.

Peppermint (*Mentha Piperita*). — The peppermint is a native of England, where it is largely cultivated, as it is to some extent in this country, for the sake of its essential oil. It is a valuable herb, having a strong aromatic smell, and a pungent, warming taste. It may be used in the form of tea, which, when largely drunk, imparts warmth to the system. It is valuable in colds, flatulent colic, hysterics, spasms, cramps in the stomach, nausea and vomiting, and to disguise unpleasant medicines.

The peppermint furnishes an essential oil, which, dissolved in alcohol, forms the essence of peppermint. The dose of this is fifteen to twenty drops, on a lump of sugar, or in sweetened water, warm or cold.

Persimmon (*Diospyros Virginiana*). — This is a tree growing in the Southern and Middle States. The bark and unripe fruit are used in medicine, — being astringent and tonic. Persimmon has been found useful in chronic diarrhœa, chronic dysentery, hemorrhage from the womb, and fever and ague. It is used in the form of infusion and syrup, in doses of a tablespoonful every two or three hours. The infusion is also used as a wash and gargle in sore mouth and throat, and as an injection in whites.

Peruvian Bark (*Cinchona*, Fig. 226).—This valuable bark is derived from several species of the cinchona tree, on the western coast of South America. The remedy is said to have been first introduced into Europe in 1640, by the Countess of Cinchon, wife of the Viceroy of Peru, on her return to Spain.

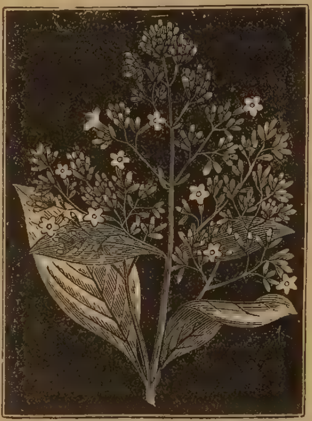


FIG. 226. PERUVIAN BARK.

There are three varieties of this bark: the pale, the red, and the yellow. The pale bark is least liable to offend the stomach, and is perhaps the best as a general tonic; but for the treatment of fever and ague, the red and the yellow are both preferable to the pale, and the red is considered better than the yellow.

Cinchona is tonic and antiperiodic, and is much used, and with great success, in all periodical diseases, as fever and ague, remittent fever, neuralgia and epidemic diseases; also in chronic diseases attended with debility, as scrofula, dropsy, and affections of the skin. Dose of the powdered bark as a tonic, from ten to fifty grains; as an antiperiodic, from twenty to seventy-five grains.

Preparations.—Fluid extract, dose, half a dram to a dram; compound fluid extract, dose, half a dram to a dram; tincture, four ounces to one pint diluted alcohol, dose, one to four drams; infusion, dose, one to one and a half ounces. A good compound infusion of cinchona is made by combining one ounce fluid extract with half an ounce of fluid extract of snakeroot, two drams of fluid extract of orange-peel, one dram of fluid extract of cloves, one dram of carbonate of potassa and one pint of water. Dose, one to one and a half ounces. The following is a good nervine and tonic for persons of nervous temperaments: fluid extract of cinchona, one ounce; fluid extract of valerian, one ounce; essence of cardamom, two drams; dose, one dram every three hours.

Cinchonia is a white crystalline substance obtained from the Peruvian bark. It is sometimes used as a substitute for quinia, in doses of from one to three grains, three times a day.

Sulphate of Quinia is snow white, and in satin-like crystals, having an exceedingly bitter taste. It is completely soluble in water or alcohol, by adding a few drops of sulphuric acid. It is the chief active principle of cinchona, and has similar properties, namely, febrifuge, tonic and antiperiodic; it is, however, less apt to nauseate and oppress the stomach. In the treatment of intermittent fevers, it has almost entirely superseded the use of the bark.

Valerianate of Quinia. — This is a combination of quinia and valerianic acid. It is tonic, febrifuge and sedative. It is used for headache of a periodic character, and for nervous irritability, wakefulness, restlessness, etc. Dose, from half a grain to two grains.

Petroleum or Rock-Oil is a dark brown or greenish liquid found abundantly in the upper strata of the earth in various parts of the world. Before the discovery of the deep deposits of the oil by artesian wells, the Indians of New York used to collect it where it oozed from the ground, and sold it as a family medicine under the name of "Seneca Oil." It has been used externally for chilblains, chronic rheumatism, diseases of the joints, and skin affections. Taken internally, it is stimulating, anti-spasmodic, and sudorific, and has been recommended for lung troubles. At present it is used in various modified forms.

Phosphorus. — This is a semi-transparent solid, is flexible, and has a waxy lustre. It is extracted from bones by sulphuric acid. As a medicine in small doses, it acts as a powerful general stimulant; in large doses, as a violent, irritant poison. When taken in substance it causes irritation of the stomach, and should, therefore, always be administered in solution; and even in this form it is objectionable; it is better to resort to the phosphates and the hypophosphites. Phosphorus, being an element in the composition of the brain, has been given with advantage in the various forms of nervous debility, as consumption, typhus fever, amaurosis, paralysis, and the general breakdown of the vital powers. Phosphorus burns when exposed to the air, and should therefore be kept covered with water.

Pink-Root (*Spigelia Marilandica*, Fig. 227). — This perennial herb grows in rich soils in the Middle and Southern States. The root is the medicinal part. It is a powerful anthelmintic, and is but little used except for expelling worms.

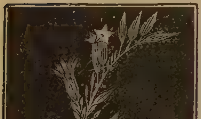


FIG. 227. PINK-ROOT.

Preparations. — Fluid extract, dose, half a dram to a dram; compound fluid extract, dose, half a dram to two drams; fluid extract of pink-root and senna, dose, half a dram to a dram; infusion, half an ounce to a pint of water, dose, two to six ounces.

Pipsissewa (*Chimaphila Umbellata*, Fig. 228). — This is a small evergreen plant, growing in the United States, and in Northern Europe and Asia. It is known by the name of *princes' pine*. The whole plant is tonic, diuretic and astringent, and has proved itself useful in dropsy, general debility, rheumatism, chronic disorders of the kidneys, bladder, urethra, etc.

Preparations. — Fluid extract, dose, one dram; solid extract, dose, ten to fifteen grains; infusion, dose, two ounces.

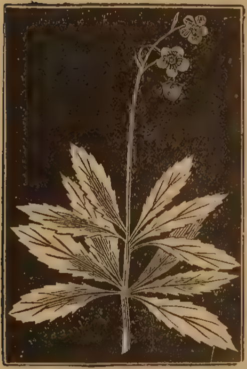


FIG. 228. PIPSISSEWA.

Plantain (*Plantago Major*). — This perennial herb grows both in Europe and America. A strong decoction of the tops and the roots is highly spoken of for syphilis and scrofula; the dose being from two to four fluid ounces, two or three times a day. But the bruised leaves are most useful when applied to wounds, ulcers, bites of poisonous insects, erysipelas, etc.

Pleurisy-Root (*Asclepias Tuberosa*, Fig. 229). — This perennial plant is abundant in the Southern States. The root, which is the part used, is carminative, tonic, and diuretic; used in pleurisy, bronchitis, inflammation of the lungs, acute rheumatism and dysentery. The warm infusion promotes diaphoresis, without raising the temperature of the body. United with the warm infusion of wild-yam root, it is excellent for flatulency and wind colic.

Preparations. — Fluid extract, dose, half a dram to two drams; tincture, four ounces to a pint of diluted alcohol, dose, three to five drams; infusion, dose, one to four ounces; asclepidin, dose, one to five grains. Ascelpidin and dioscorein, united in equal parts, make a valuable preparation for flatulent and bilious colic; dose, two to three grains.

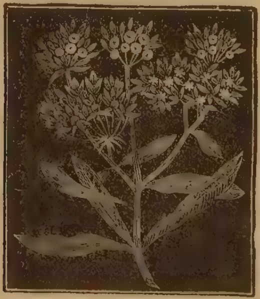


FIG. 229. PLEURISY-ROOT.

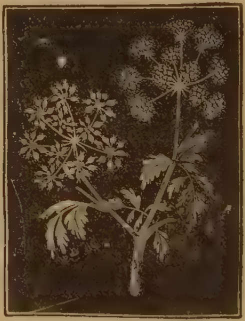


FIG. 230. POISON HEMLOCK.

Poison Hemlock (*Conium Maculatum*, Fig. 230). — This biennial plant is a native of Europe and Asia, and is naturalized in this country. The leaves and the seeds are used in medicine. Conium is narcotic, anodyne, antispasmodic and deobstruent; used in neuralgia, asthma, syphilis, chronic rheumatism, and various other affections.

Preparations. — Fluid extract, dose, five to fifteen drops; solid extract, dose, half a grain to two grains, tincture, three ounces to a pint of diluted alcohol, dose thirty drops to a dram; infusion, half an ounce to a pint of water, mainly used as a wash for malignant ulcers, etc. Use with care.

Poison Oak (*Rhus Toxicodendron*).— The leaves are the medicinal part of this creeping shrub, which is common in this country. The form of using this medicine is that of a saturated tincture, made from the fresh leaves, and to be kept in well-corked vials. It has been found useful in paralysis of the bladder and rectum, in diseases of the eyes and skin, and in chronic rheumatism. Dose of the tincture, from five to seven drops, three times a day. Large doses should be avoided.

Poke (*Phytolacca Decandra*, Fig. 231).— A perennial plant, growing in nearly all parts of the country, and called *garget*, *pigeon-berry* and *scoke*. The root is the part used. It is emetic, cathartic, alterative and slightly narcotic. It excites the whole glandular system, and is used in syphilis, scrofula, rheumatism and affections of the skin. The root, buried in hot ashes until soft, is then mashed and applied as a poultice for felons and various tumors. Dose of the powdered root as an emetic, twelve grains to half a dram; as an alterative, from two to five grains.

Preparations.— Fluid extract, dose, ten to twenty drops; solid extract, dose, one to three grains; tincture, four ounces to a pint of diluted alcohol, dose, half a dram to a dram; syrup, two ounces to fourteen ounces of simple syrup, dose, one to two drams; phytolaccin, the active principle, dose, one quarter to one grain. For mercurial and syphilitic pains in the bones the following pill is useful: solid extract of poke, two drams; solid extract of stillingia, one dram; solid extract of stramonium, eight grains. Mix, and divide into sixty pills, of which one pill is to be taken every two or three hours.

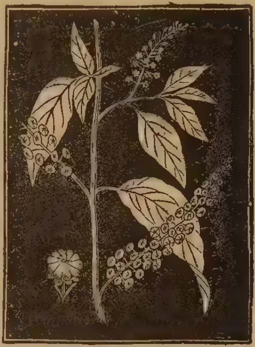


FIG. 231. POKE.

Potassa.— This is used in medicine under the name of caustic potassa. It is made by boiling a solution of potassa in a clean iron vessel until ebullition ceases, and the potassa melts, and then pouring it into cylindrical moulds; when cold it is to be kept in well-stopped bottles. It is a very powerful escharotic, quickly destroying the flesh which it touches, and extending its action deep under the surface. It differs in this respect from nitrate of silver, which only acts upon the surface, and is not, properly speaking, a caustic.

Caustic potassa is used for forming issues. The method of using it for this purpose is to cut in a piece of adhesive plaster a hole as large as the desired issue, and then, having stuck this upon the skin, to apply the end of the caustic, previously moistened, to the opening. This application is to be continued till the life of the part is destroyed, when the caustic must be neutralized by vinegar, or carefully washed off with a wet sponge.

The following preparations of potassa are used in medicine: —

Acetate of Potassa (*Potassæ Acetas*). — This is made by the union of acetic acid and carbonate of potassa, and in consequence of its extreme deliquescence when exposed to the air it is kept in closely-stopped bottles. It is diuretic, deobstruent, and mildly cathartic. It is used in febrile diseases, several skin diseases, such as psoriasis, eczema, and lepra, and particularly in dropsical affections. Dose, as a diuretic, from ten to twenty grains; as an aperient from one to two drams.

Bicarbonate of Potassa (*Potassæ Bicarbonas*). — This is a solution of carbonate of potassa, saturated with carbonic acid. This acid is diuretic, antacid, and deobstruent; used in dropsy, acidity of the stomach, and glandular obstructions. Dose, ten to twenty grains. Twenty grains dissolved in eight fluid ounces of water, and mixed with four fluid drams of lemon-juice, forms a good effervescing draught.

Bitartrate of Potassa (*Potassæ Bitartras*). — This salt is better known as *cream of tartar*, and *supertartrate of potassa*. It is formed from the matter deposited on the bottom and sides of casks, during the fermentation of sour wines. As a medicine it is diuretic, cathartic, and refrigerent. In small doses it acts as a cooling aperient, gently opening the bowels; in large ones as a hydragogue cathartic, causing free, watery stools. This property, as well as its power of acting upon the kidneys, causes it to be much used in dropsical complaints. Dissolved in boiling water, allowed to cool, and then sweetened with loaf sugar, it forms a cooling, pleasant, acid drink. This kind of solution, with a little fresh lemon-peel added to it, forms the drink called *imperial*. Combined with sulphur, it is often used in skin diseases. Dose, as an aperient, a dram or two; as a hydragogue cathartic, half an ounce to an ounce; as a diuretic in dropsical complaints, a dram and a half to two drams several times a day. Cream of tartar, powdered rhatany, and myrrh, mixed in equal proportions, form a good preparation for cleansing the teeth.

Carbonate of Potassa (*Potassæ Carbonas*). — Carbonate of potassa is *purified pearlash*, and is frequently called *salt of tartar*. Carbonate of potassa has the same medicinal properties with the bicarbonate, and is used for similar purposes.

Chlorate of Potassa. — This is prepared by passing an excess of chlorine through carbonate of potassa. It is refrigerent and diuretic, and is given in scurvy, scarlet fever, etc., and as a wash in canker in the mouth, and various unhealthy ulcers, and as an injection in leucorrhœa and gleet.

Citrate of Potassa (*Potassæ Citras*). — A grateful, cooling diaphoretic, long and much used in fevers, chiefly in the forms of the *neutral mixture*, and *effervescing draught*.

Solution of Citrate of Potassa (*Liquor Potassæ Citratis*). — This is prepared by taking half a pint of lemon-juice, and adding bicarbonate of potassa gradually to it until it is saturated, then filtering. This passes under the name of *neutral mixture*, *saline mixture*, and *effervescing draught*. It is a valuable refrigerent diaphoretic, well adapted to the hot stage of remittent and intermittent fevers, and indeed to almost all cases of fever, with a dry, hot skin. The dose is a tablespoonful, or half a fluid ounce, which should be well diluted when taken, and be repeated every two or three hours, according to the necessities of the case.

Solution of Potassa (*Liquor Potassæ*). — This is a transparent, caustic fluid, which requires to be kept in green bottles, tightly corked. It is antacid, antilithic, and diuretic. It is used in some affections of the skin, and scrofula, but more particularly for scalding of the urethra, in gonorrhœa; in this case, it is well to unite a few drops of laudanum with it. The dose is from fifteen to twenty-five drops, two or three times a day, in half a tumblerful of water. In dyspeptic cases, attended with acidity of the stomach, it may be associated with some simple bitters.

Sulphate of Potassa (*Potassæ Sulphas*). — This is a mild purgative, operating without irritation or pain. As an aperient, it should be given in doses of from a scruple to a dram. Ten grains of rhubarb and one dram of carbonate of potassa, united, and divided into six powders, is an excellent alterative cathartic for children having defective digestion and nutrition, and a tumid state of the abdomen. One powder may be given at a time, as often as may be necessary to open the bowels gently.

Tartrate of Potassa (*Potassæ Tartras*). — This often passes under the name of *soluble tartar*. It is a mild, cooling purgative, operating, as most of the neutral salts do, without much pain, and producing watery stools. It is useful in fevers. Combining it with senna destroys its tendency to produce griping of the bowels. The dose varies from a dram to an ounce, according to the effect desired.

Potassium. — This is a soft, bluish-white metal. Its union with oxygen, in the proportion of one equivalent of each, forms potassa or potash. The following preparations of it are used in medicine: —

Bromide of Potassium (*Potassii Bromidum*). — This is a permanent, colorless salt, having a pungent, saline taste, a little more acrid than common salt, yet similar to it. As a medicine it is alterative and resolvent, and is used occasionally for secondary syphilis, scrofula, and enlarged spleen. Dose, from three to five grains, three times a day, in pill or solution. One dram of the bromide of potassium, rubbed up with an ounce of lard, makes an ointment which has been used with some good effect in goitre and scrofulous affections.

Cyanuret of Potassium (*Potassii Cyanuretum*). — This is eminently poisonous, acting both as a medicine and as a poison, like hydrocyanic acid. It has therefore been recommended as a substitute for that acid. The dose is one-eighth of a grain, dissolved in half a fluid ounce of water.

Sulphuret of Potassium (*Potassii Sulphuretum*). — This is called *liver of sulphur*, and *hepar*, being composed of sulphur and potassium. It has been used in chronic bronchitis, asthma, whooping-cough, and rheumatism. Half an ounce to an ounce of it, dissolved in several gallons of warm water, makes a valuable sulphur bath for several skin diseases, as itch, prurigo, etc.

Prickly Ash (*Xanthoxylum Fraxineum*). — This shrub grows in various parts of the United States. The leaves and capsules have a pleasant, aromatic smell. Its medicinal properties are in the bark and berries. The bark is stimulant, tonic, alterative, and sialagogue. It is used to rouse and excite the system, when in a languid state, and for derangements of the liver, rheumatism, and chronic syphilis. It stimulates and strengthens mucous membranes, and is a valuable tonic in low typhoid fever. Applied externally, it improves indolent and malignant ulcers. Dose of the powdered bark, from ten to twenty grains, three times a day.

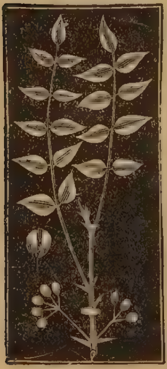


FIG. 232.
PRICKLY ASH.

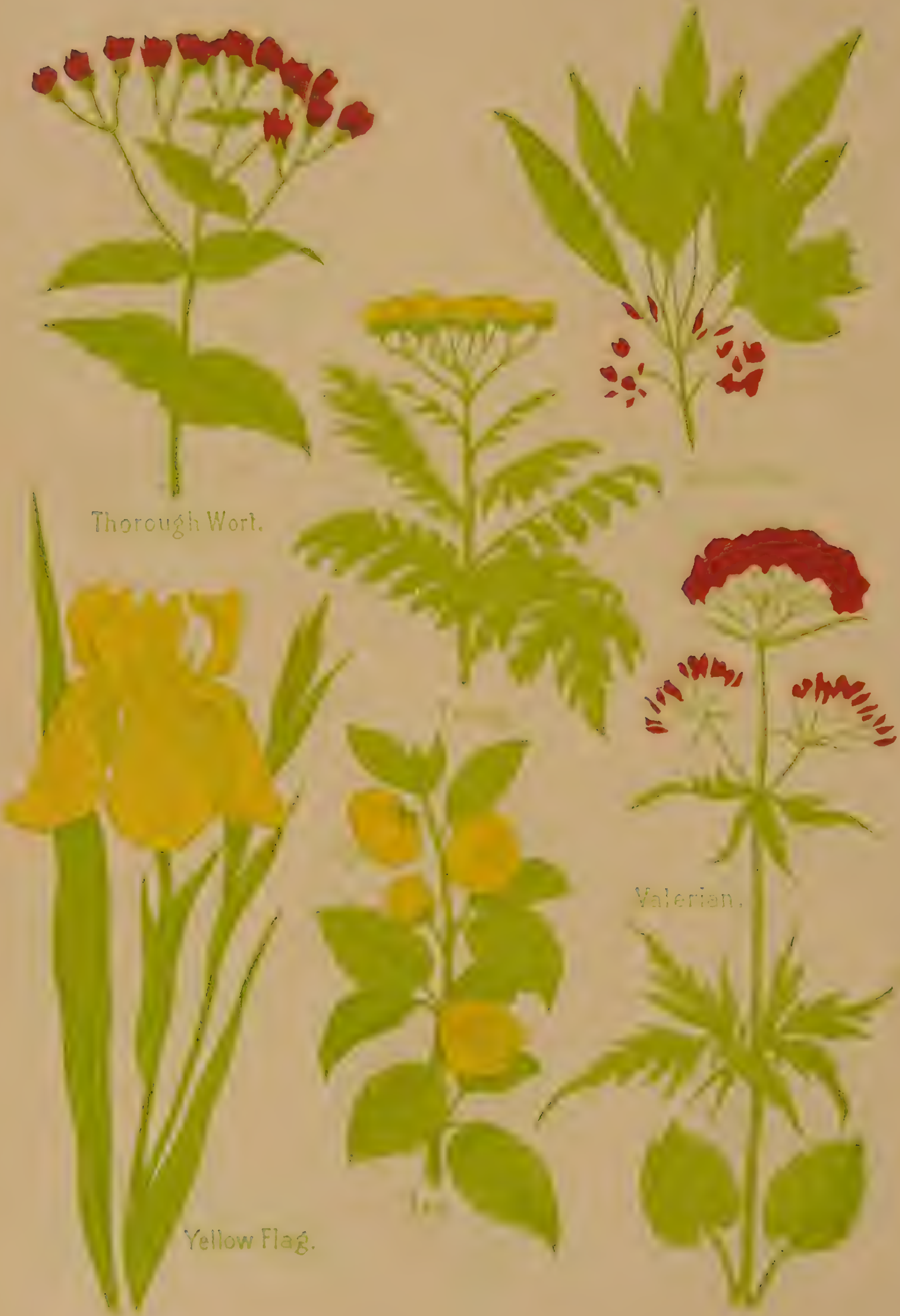
Preparations. — Fluid extract, dose, fifteen to twenty-five drops; tincture, four ounces to a pint of diluted alcohol, dose, half a dram to a dram; infusion, half an ounce to a pint of water, dose, half an ounce to two ounces; xanthoxylin, the active principle, dose, two to five grains.

For chronic rheumatism the following is a good preparation: xanthoxylin, one dram; cimicifugin, one dram; apocynin, one dram; diluted alcohol, one pint; dose, three drams, three times a day.

Prickly Ash Berries are carminative, antispasmodic, and stimulant, and have a special direction to mucous membranes. The tincture is excellent in nervous diseases, spasms of the bowels, flatulency, and diarrhœa; and, combined with the tincture of poke-berries, is very serviceable in chronic rheumatism and syphilis. It is said to have been used with great success, in the West, in Asiatic cholera. Dose of the tincture, from ten drops to a fluid dram, in sweetened water. Dose of the oil of prickly-ash berries, from two to seven drops, on sugar.

Prickly Elder (*Aralia Spinosa*). — This is a tree which grows in the Southern and Western States, and is called *Southern prickly ash*, and *toothache tree*. The bark is stimulant, alterative, and diaphoretic.

Plantain.
Parsley


Thorough Wort.
Yellow Flag.
Valerian.

The fresh bark, emetic and cathartic. The tincture is serviceable in skin diseases, syphilis, and chronic rheumatism. The bark is sialagogue, and in small doses, powdered, is said to relieve the dry and parched condition of the throat, in many diseases.

Pumpkin-Seeds — The infusion of pumpkin-seeds, made by placing them in water without bruising them, is mucilaginous and diuretic, and is used in inflammation of the stomach and bowels, scalding of the urine, strangury, etc. But this infusion is more particularly valuable for its power of expelling the tape-worm. It may be drunk freely. The oil of pumpkin seeds, obtained by expression, has similar properties, and may be taken in doses of six to ten drops, several times a day.

Quassia (*Picræna Excelsa*). — This is the wood of a tall tree growing in Surinam and some of the West India Islands. It is an intensely bitter tonic, febrifuge, and anthelmintic, possessing in the highest degree the properties of the simple bitters. It invigorates the digestive organs, without producing much excitement of the circulation. It is well adapted to dyspepsia, and the debility of the stomach which succeeds acute disease, and indeed all complaints where simple bitter is required. Its generic title perpetuates the name of the negro Quassi, of Surinam, who first discovered its medicinal virtues, about the middle of the last century, and who became famous for treating malignant fevers with it, as a secret remedy.

Preparations. — Fluid extract, dose, half a dram to a dram; solid extract, dose, three to five grains; tincture, dose, four to eight drams; infusion, two drams to a pint of water, dose, two to three ounces.

Queen of the Meadow (*Eupatorium Purpureum*). — This perennial herb grows in low, swampy places, in many parts of the country. It is called *trumpet weed*, and, from its fine medicinal effects in complaints of the urinary organs, *gravel-root*. It is an excellent diuretic, tonic, and stimulant. Used in gout, rheumatism, hematuria, chronic diseases of the urinary organs, strangury, gravel, and dropsical affections. The decoction is the form in which it is most used; the dose being two to three ounces, two or three times a day.

A preparation called *eupurpurin* is also extracted from it, which, in three-grain doses, is a powerful diuretic, occasioning, in some cases, it is said, an enormous flow of urine.

Queen's Root (*Stillingia Sylvatica*). — This perennial herb grows in sandy soils in the Southern States. The root is medicinal, being, in large doses, emetic and cathartic; in small doses, an alterative of considerable value in skin diseases, rheumatism, syphilis, and scrofula, and in such other complaints as require alteratives.

Preparations. — Fluid extract, dose, five to ten drops; compound fluid extract, dose, half a dram to a dram; tincture, two ounces to a pint of diluted alcohol, dose, one to three drams; infusion, dose, one to one and one-half ounces. In chronic bronchitis and similar complaints, the following syrup is well recommended: fluid extract of stillingia, two ounces; fluid extract of bloodroot, two ounces; fluid extract of cherry bark, two ounces; balsam of tolu, one ounce and a half; syrup, two and a half pints. Dose, one to two drams.

Red Chickweed (*Anagallis Arvensis*). — An annual plant, common in Europe and this country. It has small scarlet flowers in June and July. It has been used in nervous diseases as mania, delirium, epilepsy, and particularly hydrophobia. Old and ill-conditioned ulcers are improved by its use, in the form of poultice.

Red Root (*Ceanothus Americanus*). — This shrubby plant has the names of *New Jersey tea* and *wild snowball*, and is found in all parts of the United States. The bark is antispasmodic, sedative, astringent, and expectorant, and tastes and smells like the peach-leaf. A decoction is useful in dysentery, diarrhœa, whooping-cough, and chronic bronchitis, in doses of a tablespoonful three times a day. It makes, likewise, a very good injection in leucorrhœa and gleet, and gargle for ulcerations of the mouth and throat.

Red Clover (*Trifolium Pratense*). — The blossoms of this very common biennial plant are medicinal, and are highly recommended in deep, ragged, and cancerous ulcers, as well as in badly conditioned burns. They are soothing and detergent, and promote healthful granulation. Taken in large doses for a year or so, it is said to be good for cancer.

Preparation. — Solid extract, to be used as an external application, chiefly in the form of ointment, made by uniting four ounces of it with half a pound of lard.

Red Rose (*Rosa Gallica*). — The petals of the rose are slightly tonic and astringent, and are considerably employed in chronic inflammations of the eye. Rose-water, distilled from the petals, is used for similar purposes.

Red Saunders (*Pterocarpus Santalinus*). — This is a large tree growing in Ceylon, the wood of which imparts a red color to alcohol, ether, and alkaline solutions, but not to water. It is almost solely used for imparting color to tinctures, etc., having little or no medicinal properties.

Rosin. — This is the solid resinous matter which remains after the distillation of turpentine. It is much used as an ingredient in ointments and plasters, but is never taken internally. The vapor which arises from heating it upon some hot surface is sometimes inhaled with great advantage in chronic bronchitis, and other chronic affections of the air-tubes.

Rhatany (*Krameria Triandra*). — This is a native of Peru, growing in dry, sandy places. It is a powerful astringent, and a gentle tonic. It is given with advantage in excessive menstruation, vomiting of blood, chronic diarrhœa, leucorrhœa, and inability to retain the urine; likewise, as a local application in falling of the bowel. It is valuable also for nosebleed, and bleeding gums. Dose of the powder, for internal use, from ten to twenty-five grains.

Preparations.—Fluid extract, dose, half a dram to a dram; solid extract, dose, five to fifteen grains; tincture, three ounces to a pint of diluted alcohol, dose, three to five drams; infusion, two ounces to a pint of water, dose, half an ounce.

Rhubarb (*Rheum Palmatum*).—This root is derived from several species of rheum, and passes under the various names of *European*, *Russian*, *Chinese*, *East India*, and *Turkey rhubarb*. The variety called Russian or Turkey rhubarb (for they are the same) is considered the best. Rhubarb is cathartic, astringent, and tonic. It is much used in mild cases of diarrhœa and cholera infantum; likewise, as a stomachic and gentle tonic in dyspepsia, accompanied with a debilitated state of the digestive organs. It is a valuable remedy in the complaints of children, and is deservedly much used in treating them. It acts upon the muscular coat of the bowels, producing thick rather than watery stools. It is therefore not adapted to the treatment of dropsical complaints. Its astringency may be increased by roasting it, or diminished by combination with an alkali.

Preparations.—Fluid extract, dose, half a dram to a dram; aromatic fluid extract, dose, half a dram to a dram; fluid extract of rhubarb and senna, dose, half a dram to a dram; solid extract, dose, two to eight grains; tincture, an ounce and a half of fluid extract, and half an ounce of essence of cardamom, to a pint of diluted alcohol, dose, half an ounce to an ounce and a half; infusion, one ounce fluid extract and two ounces spirit of cinnamon to a pint of water, dose, one to three ounces; syrup, three ounces of fluid extract to fourteen of syrup, dose, two to five drams.

Rosemary (*Rosemarinus Officinalis*).—This evergreen shrub grows on the borders of the Mediterranean, and is cultivated in Europe and this country. It is stimulant, antispasmodic, and emmenagogue. It is not used in this country, however, except to perfume ointments, tinctures, and syrups.

Round-Leaved Pyrola (*Pyrola Rotundifolia*).—This perennial shrub grows in various parts of our country, and bears white flowers in June. It is called *canker-lettuce*, *pear-leaf wintergreen*, etc. Its medicinal properties are those of a tonic, astringent, antispasmodic, and diuretic. Used in decoction for epilepsy and other nervous disorders; also for gravel, and other diseases of the bladder and kidneys. The decoction may be used, too, as a wash for ulcerations of the mouth, indolent ulcers, and chronic ophthalmia. The decoction may likewise be used in making poultices for painful swellings, boils, and carbuncles. It may be taken in doses of from one to four ounces.

Rue (*Ruta Graveolens*).—Rue has the medicinal virtues of the antispasmodics, anthelmintics, and emmenagogues. In large doses it is poisonous. It is useful in wind-colic, worms, hysterics, epilepsy, etc. Dose of the leaves, from ten to fifteen grains; of the infusion, from one to two ounces. Use with care.

Saffron (*Crocus Sativus*).—This is a native of Greece and Asia Minor; it is also cultivated in France, England, and America, as well as in other countries. It has been thought to be stimulant and antispasmodic in small doses, relieving pain, and producing sleep; in large doses, giving rise to headache, and producing stupor. In the general judgment of the profession it is now considered, however, as having very little activity. It is accordingly not much used, except in domestic practice, where it has some reputation among nurses for its power to bring out measles, and other eruptions. It is also thought to be beneficial in amenorrhœa, dysmenorrhœa, chlorosis, and hysteria. It is chiefly used at present to impart flavor and color to tinctures.

Preparations.—Fluid extract, dose, twenty to forty drops; tincture, dose, half a dram to a dram; infusion, one dram to a pint of water, dose, one to two ounces.

Sage (*Salvia Officinalis*).—The tops and leaves of this well known garden plant are aromatic, astringent, diaphoretic, and slightly tonic. The infusion is useful in debilitated conditions of the stomach, attended with flatulence; it frequently relieves nausea; the cold infusion checks and sometimes entirely removes the night-sweats of hectic. The infusion is useful as a gargle in inflammation of the throat, particularly if united with a little honey and alum. Dose of the infusion, from one to three fluid ounces.

Sarsaparilla (*Smilax Officinalis*).—Grows in swamps and hedges in the Middle and Southern States. The root has long been held in esteem as an alterative, diuretic, and demulcent, being used in scrofula, chronic rheumatism, and affections of the skin; but its most extensive and useful application has been found to be in the treatment of secondary and tertiary syphilis; and especially in the broken condition of the system which follows the use of mercury in these affections.

Preparations.—Fluid extract, dose, one dram; fluid extract of sarsaparilla and dandelion, dose, one dram; solid extract, dose, five to twenty grains; infusion, dose, two to three ounces.

Sassafras (*Laurus Sassafras*).—This tree is common in the United States. The bark of the root, which is the medicinal part, is alterative, diuretic, diaphoretic, and a warm aromatic stimulant. It is mainly used to improve the flavor of other medicines, and also as a constituent of those compounds which are recommended in chronic rheumatism, syphiloid affections, eruptions of the skin, and scurvy.

Preparations. — Fluid extract, dose, one to two drams; tincture, six ounces to a pint of alcohol, dose, half an ounce to an ounce; infusion, two ounces to a pint of water, to be drunk as desired.

Savin (*Juniperus Sabina*). — An evergreen shrub, growing in Europe and North America. The tops and leaves are diuretic, diaphoretic, emmenagogue, and anthelmintic. The warm infusion promotes menstruation, and destroys worms. Care should be taken never to administer this medicine during pregnancy, its effects being violent and dangerous.

Preparations. — Fluid extract, dose, ten to twenty drops; solid extract, dose, one to three grains; tincture, four ounces to a pint of diluted alcohol, dose, half a dram to a dram and a half; infusion, half an ounce to a pint of water, dose, half an ounce to an ounce. The following mixture is useful in amenorrhœa: fluid extract of savin, half a dram; fluid extract of ginger, one dram; sulphate of potassa, two drams. Mix. Dose, half a dram twice a day. The oil of savin has properties similar to those of the leaves. Dose, from two to five drops, on sugar.

Scammony (*Convolvulus Scammonia*). — This plant is a native of Syria and the neighboring countries. The medicinal part is the hardened juice of the fresh root. It is an energetic cathartic, producing griping, and sometimes operating with decided harshness, on which account it is generally combined with other medicines which lessen the severity of its action. The dose is from five to fifteen grains.

Scullcap (*Scutellaria Lateriflora*, Fig. 233).—An indigenous plant, flowering in July and August. The whole herb is used. It is a valuable nervine, tonic, and antispasmodic; while it gives support to the nerves, it imparts both quietness and strength to the whole system, and does not, like other nervines, leave the patient excited and irritable. It finds its use in the treatment of neuralgia, chorea, convulsions, lockjaw, and most other diseases of the nervous system.

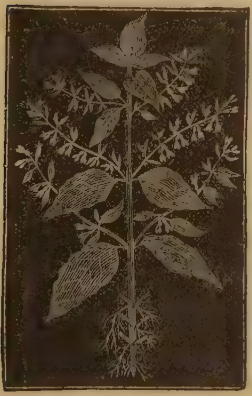


FIG. 233. SCULLCAP.

Preparations. — Fluid extract, dose, half a dram to a dram; compound fluid extract, dose, half a dram to a dram; tincture, four ounces to a pint of diluted alcohol, dose, one to two drams; infusion, dose, a wineglassful three times a day; scutellarin, the active principle, dose, two to five grains.

Seneka (*Polygala Senega*). — An indigenous plant, commonly called *snakeroot*, the root of which is used in medicine. It is a stimulating diuretic and expectorant, and in large doses an emetic and cathartic. It excites all the secretions. It is useful in chronic bronchitis, and in other chronic affections of the breathing-tubes.

Preparations. — Fluid extract, dose, twenty to twenty-five drops; infusion, dose, one ounce to an ounce and a half; syrup, four ounces of fluid extract to twelve ounces simple syrup, dose, half a dram to a dram. The following is a very good expectorant cough preparation: fluid extract of seneka, three drams; fluid extract of squill, half a dram; syrup of tolu, two drams; paregoric, two drams; carbonate of ammonia, twenty grains; water, four and a half ounces. Mix. Dose, one dram.

Senna (*Cassia Acutifolia.*). — Grows abundantly in Upper Egypt. The leaves are the medicinal part. It is a mild, active, and certain cathartic, and is much used in combination with other medicines, particularly epsom salts. The addition of cloves, ginger, cinnamon, and other aromatics, removes all its tendency to griping, and makes it a safe and gentle yet active purgative, calling for an evacuation of the bowels.

Preparations. — Fluid extract, dose, one to two drams; fluid extract of senna and jalap, dose, half a dram to a dram; solid extract, dose, three to five grains; tincture, three ounces to thirteen ounces of diluted alcohol, dose, half an ounce to an ounce; infusion, two ounces to a pint of water, dose, half an ounce to an ounce.

Shrubby Trefoil (*Ptelea Trifoliata*). — This shrub, which grows in the West, is called *wafer-ash* and *wingseed*. Its bark and root have tonic properties, and are used in intermittent and remittent fevers, and wherever nature needs a lift in getting up from exhausting complaints. The medicine, like other tonics, improves the appetite and digestion. Dose of the solid extract, from three to five grains, three or four times a day; of the cold infusion, a tablespoonful every two or three hours.

The oleo-resinous principle of the crude bark is called ptelein, and is a powerful tonic. Dose, one or two grains three or four times a day.

Skunk-Cabbage (*Symplocarpus Fœtidus*, Fig. 234). — A perennial plant, growing in moist places throughout the United States; sometimes called *meadow-cabbage*. The root is stimulant, expectorant, antispasmodic, and slightly narcotic. It is given for pulmonary and bronchial affections, epilepsy, hysterics, asthma, whooping-cough, and irritable nerves.

Preparations. — Fluid extract, dose, twenty to fifty drops; tincture, three ounces to a pint of alcohol, dose, half a dram to a dram; infusion, dose, one to one and a half ounces; syrup, two ounces of fluid extract to eight ounces of simple syrup, dose, two to three drams. For asthma and cough, and to promote expectoration and remove tightness across the chest, the following is a very good compound preparation: one ounce each of the fluid extract of skunk-cabbage, lobelia, bloodroot, pleurisy-root, and ginger, one pint of water, and three pints of alcohol. Dose, two to three drams.

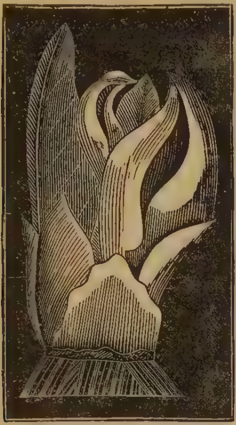


FIG. 234. SKUNK-CABBAGE.

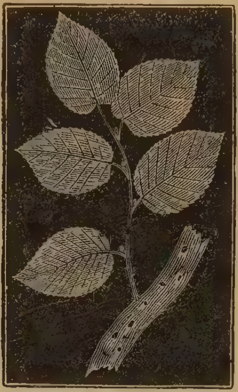


FIG. 235. SLIPPERY ELM.

Slippery Elm (*Ulmus Fulva*, Fig 235).—The inner bark of this well-known tree is nutritive, demulcent, emollient, and slightly expectorant and diuretic. It is valuable as a demulcent drink in inflammations of the lungs, stomach, bowels, bladder, and kidneys; also for coughs, strangury, dysentery, and the summer complaints of infants. It makes a valuable poultice for various purposes.

Small Spikenard (*Aralia Nudicaulis*).—This plant grows throughout the United States, from Canada to the Carolinas, in rocky woods. It is called *false sarsaparilla* and *wild sarsaparilla*. The root is a gentle stimulant, diaphoretic and alterative. It is used in domestic practice, and by some physicians, in rheumatism, syphilis, and cutaneous diseases. The American spikenard, *Aralia racemosa*, resembles the small spikenard in medicinal properties. Either of these roots is valuable in chronic affections of the lungs and air-tubes.

Soap (*Sapo*).—Soap is laxative, antacid, and antilithic, and is much used in combination with cathartics, to lessen the severity of their action. In mesenteric fever, advantage is derived from rubbing the tumid belly of children with a strong lather of soap, morning and evening; and few things are more effectual in removing hardened feces from the rectum in cases of obstinate costiveness than an injection of soap-suds. Soap is now made out of so many kinds of fat that care should be taken to use as medicine only the best Castile.

Sodium.—This is a soft white metal. United with oxygen in the proportion of one equivalent each, it forms the alkali, *soda*. The following are the principal preparations of soda used in medicine:—

Bicarbonate of Soda (*Sodæ Bicarbonas*).— This is a white, inodorous powder, sometimes called *supercarbonate of soda.* It is antacid, antilithic, and slightly diuretic. It is chiefly used in preparing what are called soda-powders, and in various preparations of medicine, when an antacid is required. It is also taken simply dissolved in water, for acidity of the stomach.

Borate of Soda (*Sodæ Boras*). — This is everywhere known by the name of *borax.* It exists naturally formed in various parts of the world, and is likewise manufactured. It is a mild refrigerent and diuretic ; also emmenagogue, promoting menstruation, facilitating parturition, and favoring the expulsion of the after-birth by its specific influence upon the womb. It has considerable reputation in the treatment of urinary diseases, particularly those connected with an excess of uric acid. The dose is from twenty to twenty-five grains in solution. Combined with rose-water, honey, and various other things, according to circumstances, borax makes a valuable wash for inflammatory affections of the mouth and throat, skin-diseases, etc.

Chloride of Sodium (*Sodii Chloridum*). —This is the chemical name of *muriate of soda* or *common salt.* In small doses, it is tonic, alterative and anthelmintic. It checks bleeding from the lungs, when taken in teaspoonful doses. The dose as an alterative is from ten to sixty grains. As moderately used in food by most civilized people, it promotes digestion and improves the general health.

Sulphate of Soda (*Sodæ Sulphas*). — This has a very pretty name, but it will not sound half as well to thousands of young persons, when they are told that it is the well-known *Glauber's salts.* From half an ounce to an ounce of it dissolved in half a tumblerful of water acts as a cathartic ; a smaller dose, as a laxative and diuretic. Its nauseous and bitter taste may be somewhat concealed by a little cream of tartar or lemon-juice.

Sulphite of Soda (*Sodæ Sulphis*). — This preparation is in the form of transparent crystals, and is very soluble in water. In doses of sixty grains, this is said to have been used with success in frothy vomitings ; it is also well spoken of as a remedy in acute rheumatism, and as a wash in thrush and some diseases of the skin.

Tartrate of Potassa and Soda (*Sodæ et Potassæ Tartras*). — This is one of the mildest and most cooling purgatives among the salts. It is known as *Rochelle salt*, and generally agrees well with irritable and delicate stomachs. Dose, from four drams to two ounces, in a tumblerful of water. The gentle physic called *Seidlitz powders* is composed of two drams of rochelle salt and two scruples of bicarbonate of soda in a blue paper, and thirty-five grains of tartaric acid in a white paper. The contents of each paper is dissolved in half a tumbler of water by itself ; one solution is then poured into the other, and the whole is drunk during the effervescence.

Solomon's Seal (*Convalaria Multiflora*).—This is one of our own perennial plants, and is found in various parts of the country. The root is tonic, mucilaginous and astringent. It acts especially upon mucous tissues, and has therefore found its use in chronic dysentery and piles, and in chronic inflammation of the stomach and bowels. Dose of the decoction, or infusion, from one to four fluid ounces, three or four times a day. Large doses purge and vomit. The decoction applied locally, relieves the inflammation caused by the poison ivy.

Solution of Arsenite of Potassa (*Liquor Potassæ Arsenitis*).—This is known under the names of *arsenical solution* and *Fowler's solution*. It is a transparent liquid, having the color, taste and smell of spirits of lavender. It has the general action upon the human body of the arsenical preparations. It is the preparation generally resorted to where arsenic is given internally, and is used with considerable success in intermittent fever, leprosy and several other skin diseases, St. Vitus's dance, periodical headache, and some other complaints. The dose is from three to five drops, three times a day, given in water; generally, it is better not to go beyond five drops. Sometimes it disturbs the stomach and binds the bowels, producing headache, dizziness and confusion of mind. When such effects follow its use, it must be laid aside and a purgative given. After an interval of two weeks, it may be resumed in smaller doses. It often requires to be used for several months.

Spanish Flies (*Cantharis Vesicatoria*).—These insects are of a beautiful, shining, golden-green color. They attach themselves to such trees, in France, Spain and Italy, as the white poplar, elder, privet and lilac, upon the leaves of which they feed. They make their appearance in swarms upon these trees in May and June, and are shaken off in the morning while torpid with the cold. Internally administered, they are a powerful stimulant, exercising a peculiar influence over the urinary and genital organs. In large doses, they excite violent inflammation of the alimentary canal and urinary organs, strangury, irritation of the sexual organs, headache, delirium, and convulsions; also painful priapism, vomiting, bloody stools, salivation, fetid breath, hurried breathing, and difficulty of swallowing. They are given internally for chronic gonorrhœa, leucorrhœa, seminal weakness, and paralysis of the bladder. Dose of the powder, from half a grain to a grain; of the tincture, from twenty to fifty drops. Solution of potassa given every hour, in thirty-drop doses, is a remedy for strangury produced by cantharides. Spanish flies are used externally, in the form of blistering plaster; also in the form of tincture, mixed with various solutions, to produce irritation and redness of the skin.

Spearmint (*Mentha Viridis*).—This has carminative, diuretic and antispasmodic virtues. The warm infusion of it is much em ployed in domestic practice to produce perspiration after taking cold, and while suffering from feverish symptoms from various causes. The oil of spearmint has similar properties with the herb, and may be taken in five- to eight-drop doses, on sugar. One ounce of the oil of spearmint dissolved in a pint of alcohol, constitutes the essence of spearmint.

Spermaceti (*Cetaceum*).—This is a white crystalline substance obtained from the head of the spermaceti whale. In househeld practice, it is considerably used for the coughs and colds of children, being generally simmered with molasses or white sugar. It forms a part of several cerates and ointments.

Spider's Web (*Tela Araneæ*).—The web of the black or brown spider, gathered in barns, cellars, etc., is sometimes given in five- or six-grain doses, in pill form, and it is said with good effect, in periodical headache, hysterics, St. Vitus's dance, asthma, and fever and ague. It is likewise applied externally to check bleeding. Care should be taken to have it clean and free from dust.

Spirit of Nitric Ether (*Spiritus Ætheris Nitrici*).—The general reader will know this article better under the name of *sweet spirits of nitre*. It is diuretic, diaphoretic, antispasmodic and stimulant, and in large doses, a narcotic poison. It is much used in diseases of the urinary organs, either alone or combined with sedatives, and other diuretics. Dose, from twenty to thirty drops, to be taken in water, three or four times a day.

Sponge (*Spongia*).—When burned, this is used as an alterative in scrofula, scrofulous tumors, goitre, and obstinate diseases of the skin. It is much employed by homœopathic physicians, though it has much less remedial power than iodine. Dose, one to two drams, mixed with honey or syrup.

Spurred Rye (*Secale Cornutum*).—This is a diseased product of rye, known by the name of *ergot*. This article has a peculiar effect upon the womb, causing it to contract with great energy, when given in full doses. It should never be given, however, continuously, for a great length of time, as it has been known, when so used, to produce dry gangrene, typhus fever, and nervous disorders connected with convulsions. Such were its effects in certain provinces of France, in consequence of the use of rye bread contaminated with it. It is useful in excessive uterine hemorrhage, which it arrests by causing the womb to contract, and thus to condense its tissue and close up its bleeding vessels. It has also been successful in bleeding from the lungs.

Preparations.—Fluid extract, dose, half a dram to a dram; tincture, four ounces to a pint of diluted alcohol, dose, two and a half to five drams; infusion, dose, one to two ounces; wine, five ounces of fluid extract to a pint of sherry wine, dose, two to three drams, in cases of labor; for other purposes, one to two drams.

Squill (*Scilla Maritima*). — A perennial plant growing in countries on the Mediterranean. In large doses it is emetic and purgative; in small doses expectorant and diuretic. It is used in pulmonary affections to increase expectoration, and in dropsical complaints to augment the secretions of the kidneys. Dose of the dried root, one to five grains, generally to be united with nitre or ipecac.

Preparations. — Fluid extract, dose, as an expectorant and diuretic, two to six drops; as an emetic, twelve to twenty drops; compound fluid extract, dose, ten to twenty drops; tincture, two ounces to a pint of diluted alcohol, dose, twenty to thirty drops; syrup, dose, a quarter to half a dram.

Star-Grass (*Aletris Farinosa*, Fig. 236). — This plant is found in dry soils throughout most parts of the United States, and called *unicorn-root*, *ague-root*, and *crow-corn*. The root is an intensely bitter tonic, and is used to improve the tone of the stomach, and for flatulent colic and hysterics. It is said also to give tone to the female generative organs, affording a protection against miscarriage. The Eclectics call it one of their best agents in chlorosis, suppressed menstruation, engorgement and falling of the womb, and painful menstruation. Dose of the powdered root, from five to ten grains, three times a day.

Preparations. — Fluid extract, dose, ten to twenty drops; tincture, two ounces to a pint of diluted alcohol, dose, half a dram to a dram; infusion, two drams to a pint of water, dose, one or two ounces; syrup, dose, one to two drams; aletridin, the active principle, dose, one to three grains.

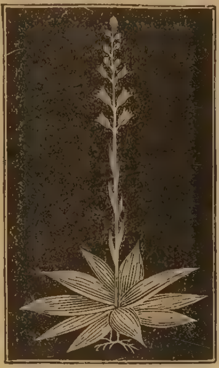


FIG. 236. STAR-GRASS.

St. Ignatius' Bean (*Faba Sancti Ignatii*). — The seeds are the part used, and are the product of the *Ignatia Amara*, — a tree of middle size, growing in the Philippine Islands, and is a species of the *strychnos*. These seeds possess a large amount of strychnine, and consequently, in medicinal doses, are a powerful nervine tonic, and are used for improving the digestive functions, and for rousing and strengthening the whole system when prostrated by nervous complaints.

Preparations. — Fluid extract, dose, five to ten drops; solid extract, dose, half a grain to a grain and a half.

Storax (*Styrax Officinale*). — This is the hardened juice of the storax, a native of the countries along the Mediterranean. It is a stimulant and expectorant, and is used for chronic bronchitis, laryngitis, and cough. The *liquid storax* is sometimes employed instead of copaiba in gonorrhœa and gleet. The dose is from ten to fifteen grains. Storax is a constituent in the compound tincture of benzoin.

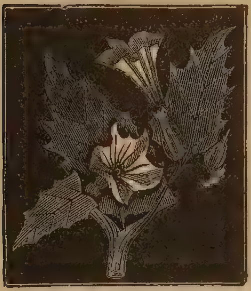


FIG. 237. STRAMONIUM.

Stramonium (*Datura Stramonium*, Fig. 237).— This annual plant is most known in this country by the name of *Jamestown weed;* in England by that of *thornapple.* The leaves and seeds are medicinal. Stramonium is a powerful narcotic; it is also antispasmodic, anodyne, and sedative. It is used in various nervous affections, as chorea, epilepsy, palsy, tetanus, and mania. It is much used for relieving acute pains, etc. Taken in large doses, it is a powerful poison.

Preparations.— Fluid extract, dose, five to fifteen drops; solid extract, dose, half a grain to a grain; tincture, two ounces to a pint of alcohol, dose, half a dram to a dram, and to be gradually increased. Use with care.

Sulphur.— This is considerably used in medicine, being laxative, diaphoretic, and resolvent. It is chiefly used for piles, chronic rheumatism, gout, asthma, and those affections of the breathing organs not attended with acute inflammation. Externally and internally, it is much employed in skin-diseases, particularly for itch, for which it is a specific. In these affections, it is frequently applied in the form of sulphur baths. The dose of sulphur is from one to three drams, mixed with syrup, molasses, or milk. When sublimed, this article is called *flowers of sulphur*, which is the form in which it is chiefly used in medicine.

Sumach (*Rhus Glabrum*).— Found in almost all parts of the United States in old, neglected fields, and by the side of fences. The bark and berries are astringent, tonic, antiseptic, and diuretic, and are used in diarrhœa, dysentery, gonorrhœa, whites, hectic fever, and scrofula. The berries make a valuable gargle in quinsy and ulcerations of the mouth and throat, and also a useful wash for ringworm, tetter, and ulcers. The excrescences which grow upon the leaves have nearly as much astringency as galls, and when pulverized and mixed with lard, have a similarly soothing effect upon piles.

Preparations.— Fluid extract, dose, one to two drams; tincture, four ounces to thirteen ounces of diluted alcohol, dose, half an ounce to an ounce.

Sunflower (*Helianthus Annuus*).— The seeds and leaves of this plant are expectorant and diuretic, and are useful in several pulmonary affections. The seeds yield a fixed oil, in which their medicinal virtues are chiefly found. In doses of ten or fifteen drops, this oil acts favorably upon inflamed mucous surfaces, and in doses twice as large it greatly augments the flow of urine.

Swamp Dogwood (*Cornus Sericea*). — This is found in damp places, and along the banks of rivers, in various parts of our country, and is known as *red osier*, *red willow* and *rose willow*. The bark is tonic, stimulant and astringent, and has been used for similar purposes with dogwood-bark; it is well spoken of, also, for dyspepsia, diarrhœa, malignant fevers, and as an external application to foul and ill-conditioned ulcers. Dose of the powdered bark, from twenty to fifty grains; of the infusion, from two to three fluid ounces.

Swamp Milkweed (*Asclepias Incarnata*). — This is a native of the United States, and bears red flowers from June to August. It has the name of *white Indian hemp*. The root is emetic, cathartic, and diuretic, and is useful in asthma, bronchitis, rheumatism, syphilis, and worms.

Preparations. — Fluid extract, dose, twenty to thirty drops; solid extract, dose, three to five grains; tincture, two ounces to a pint of diluted alcohol, dose, one and a half to three drams; infusion, dose, three to five drams; syrup, four ounces fluid extract to twelve ounces simple syrup, dose, half a dram to a dram.

Sweet Fern (*Comptonia Asplenifolia*). — This shrub, growing in stony pastures in New England and Virginia, is tonic, astringent, alterative and aromatic, and is used in diarrhœa, dysentery, cholera-infantum, rheumatism, and debility after fevers. Dose of the decoction, from one to three fluid ounces, three or four times a day.

Sweet Flag (*Acorus Calamus*). — Found in damp places, in most parts of the world. The root is stimulant, tonic, and aromatic; useful in wind colic, weakened conditions of the stomach, and dyspepsia. Dose of the root, from twenty to sixty grains; of the infusion, from two to three fluid ounces.

Sweet Gum (*Liquidamber Styraciflua*). — This tree grows in the Middle and Southern States. Being wounded, it yields a yellowish-white, honey-like balsam, which hardens into a gum. This, melted with equal parts of lard or tallow, forms an ointment which is used in some parts of the country for piles, ringworm of the scalp, fever-sores, and other complaints. Used internally, it has very nearly the same effects as storax.

Tag Alder (*Alnus Rubra*). — This shrub grows in swamps and other damp places, in northern United States. The bark is alterative, emetic, and astringent. It is used in scrofula, secondary syphilis, herpes, impetigo, and other skin-diseases.

Preparations. — Fluid extract, dose, one to two drams; infusion, two ounces to a pint of water, dose, one to one and a half ounces; alnuin, the active principle, dose, one to two grains.

Tansy (*Tanacetum Vulgare*). — Tansy is a perennial herb, having tonic, emmenagogue, and diaphoretic properties; the cold infusion being tonic, and useful in dyspepsia, wind in the stomach, jaundice, and worms; the warm infusion, diaphoretic and emmenagogue. Dose of the infusion, from one to three fluid ounces, two or three times a day.

Tar (*Pix Liquida*). — The medicinal qualities of tar are like those of turpentine, and it is sometimes used in old chronic coughs and bronchitis. The vapor of boiling tar was once thought to be very serviceable in bronchial diseases, when inhaled. Doubtless it is useful in some cases, but its virtues have been extolled above their merits. In the form of ointment it has real efficacy in scald head and tetter.

Thimbleweed (*Rudbeckia Laciniata*). — The whole of this herb is balsamic, diuretic, and tonic, and in the form of decoction, used freely, is said to have been found useful in some urinary complaints, as Bright's disease, strangury, etc.

Tobacco (*Nicotiana Tabacum*). — The leaves of tobacco are acrid, narcotic, and poisonous, and are chiefly used in the form of ointment, in skin diseases, etc. Its poisonous qualities, however, render it dangerous when much used, even externally. Nervous people should not smoke. Chewing is not only an unhealthy, but a disgusting habit.

Trailing Arbutus (*Epigiæa Repens*). — This grows in sandy woods and rocky soils, its flowers appearing in early spring, and exhaling a spicy fragrance. The leaves are diuretic and astringent, and are very useful in gravel, and most diseases of the urinary organs, being regarded in some cases superior to uva-ursi and buchu. *Preparations* — Fluid extract, dose, one to two drams; infusion, dose, two to three ounces.

Tapioca (*Janipha Manihot*, Fig. 238). — This plant grows in the West Indies and Brazil. It is cultivated chiefly on account of the root, which is largely used as an article of food, particularly for the sick, or rather for those recovering from sickness. The starch which it contains is separated by washing, scraping, grating, and grinding, and is in the form of hard, white, rough grains. It is prepared for use by boiling; and, in debility and low forms of disease, may have the addition of wine, nutmeg, or other aromatics.

FIG. 238. TAPIOCA.

Tulip Tree (*Liriodendron Tulipifera*). — This is a large and elegant tree growing in many parts of the country, and called *poplar* and *white poplar*. The bark of the root is aromatic, stimulant, and tonic, and in warm infusion, diaphoretic. It is used in fever and ague, chronic rheumatism, and chronic diseases of the stomach and bowels. Dose of the powdered bark, from a scruple to two drams; of the infusion, from one to two fluid ounces.

Turkey Corn (*Corydalis Formosa*).—This perennial plant is called *wild-turkey pea* and *stagger-weed*, and grows in rich soils in the Southern and Western States. The tuber, which is the medicinal part, should only be collected when the plant is in flower. It is tonic, diuretic, and alterative. It is much valued as a remedy in syphilis and scrofula.

Preparations.—Fluid extract, dose, ten to thirty drops; tincture, three ounces to a pint of diluted alcohol, dose, half a dram to two drams; corydalin, the active principle, dose, half a grain to a grain. A valuable alterative for syphilis is made by uniting eight grains of corydalin with ten grains of hydrastin, and dividing into twelve powders. Dose, one powder three or four times a day.

Turmeric (*Curcuma Longa*).—This is a native of the East Indies and Cochin China. The root is a stimulant aromatic and tonic, somewhat like ginger, employed in debilitated states of the stomach, etc.

Preparations.—Fluid extract, dose, two or three drams; tincture, two ounces to twelve ounces of diluted alcohol, dose, one and a half to two ounces; infusion, dose, two to four ounces.

Valerian (*Valeriana Officinalis*).—This is a European plant, flowering in June or July. The root is tonic, nervine, and antispasmodic, and is much used in cases of irregular nervous action, particularly morbid nervous vigilance, or hypochondria, epilepsy, lowness of spirits, and nervous headache.

Preparations.—Fluid extract, dose, half a dram to a dram; solid extract, dose, three to eight grains; tincture, four ounces to a pint of diluted alcohol, dose, two to three drams; infusion, half an ounce to a pint of water, dose, two to three ounces; syrup, four ounces of fluid extract to a pint of simple syrup, dose, two to three drams.

Vervain (*Verbena Hastata*).—A perennial plant, common in the United States. The root is tonic, emetic, expectorant, and sudorific. It is used in intermittent fevers, colds, and obstructed menstruation, in the form of warm infusion. The cold infusion is a good tonic in loss of appetite, debility, etc. Dose of the powdered root, one or two scruples; of the infusion, from two to three ounces, three or four times a day.

Vinegar (*Acetum*).—This is refrigerant, diuretic, astringent, and tonic; used in fevers and inflammatory complaints, likewise in scurvy and typhus, as an antiseptic. It has been found useful in dysentery and scarlet fever, saturated with common salt. Externally, it is applied to bruises, inflammations, sprains, and swellings. It sometimes has a good effect as a gargle in putrid sore throat, etc., and as a cooling wash in headache during fevers.

Virginia Snake-root (*Aristolochia Serpentaria*, Fig. 239). — This is a perennial herb of the Middle and Southern States. The root is stimulant, tonic, and diaphoretic. It is used in typhoid fevers, when the system needs support, but cannot bear active stimulation. Combined with Peruvian bark, it is also used in intermittent fevers. The cold infusion is employed in some forms of dyspepsia; likewise as a gargle in malignant sore throat.

Preparations. — Fluid extract, dose, one-quarter to half a dram; tincture, three ounces to a pint of diluted alcohol, dose, one to two drams; infusion, half an ounce to a pint of water, dose, one to two ounces, in low forms of fever. The following is a good compound tincture: half an ounce each of fluid extract of snake-root, fluid extract of ipecac, fluid extract of saffron, fluid extract of ladies' slipper, together with half an ounce of camphor, and one and a half pints of diluted alcohol; dose, a dram to a dram and a half.

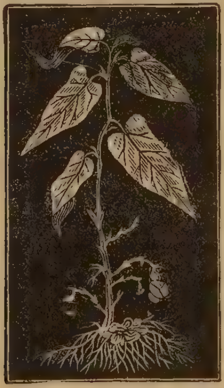


FIG. 239. VIRGINIA SNAKE ROOT.

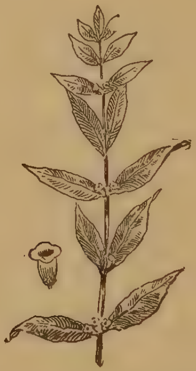


FIG. 240. WATER-HOREHOUND.

Water-Horehound (Fig. 240). — This article has been described under *Bugle-Weed* (Lycopus Virginicus). See *Bugle-Weed.*

Water-Pepper (*Polygonum Punctatum*). — This annual plant is called *smart-weed*, and grows throughout our country, in low grounds, and along ditches and brooks. It has a pungent, biting taste, and is stimulant, diuretic, emmenagogue, antiseptic, and vesicant. It is used in coughs, colds, gravel, and womb-complaints.

Preparations. — Fluid extract, dose, ten to forty drops; solid extract, dose, two to three grains; tincture, four ounces to a pint of diluted alcohol, dose, half a dram to two drams; infusion, half an ounce to a pint of water, dose, half an ounce to an ounce.

Wahoo (*Euonymus Atropurpureus*). — A small shrub growing in woods in many parts of the United States. The bark of the root is a bitter tonic, laxative, alterative, diuretic, and expectorant, and is advantageously used in pulmonary affections, dropsy, constipation, torpidity of the liver, dyspepsia, and intermittent fevers.

Preparations. — Fluid extract, dose, one to two drams; tincture, four ounces to twelve ounces of diluted alcohol, dose, half an ounce to an ounce.

Wax. — The yellow and white wax are chiefly used as ingredients of plasters and ointments.

White Hellebore (*Veratrum Album*). — This is a European perennial plant, the root of which is a violent emetic and purgative, and in large doses is poisonous; not often used, except externally, in the form of ointment or decoction, for the cure of itch and some other skin-diseases.

White Oak (*Quercus Alba*). — The inner bark of the white oak is astringent, tonic, and antiseptic, and has been used in intermittent fever, chronic diarrhœa, chronic mucous discharges, and passive hemorrhages. As a wash applied externally it sometimes arrests night-sweats, and as an astringent gargle and injection its use is common for relaxed palate, spongy gums, leucorrhœa falling of the bowel, etc.

Preparations. — Fluid extract, dose half a dram to a dram; solid extract, dose, ten to fifteen grains; tincture, two ounces to a pint of diluted alcohol, dose, half an ounce to an ounce.

White Pond-Lily (*Nymphœa Odorata*). — This grows in ponds and marshes in many parts of our country. The root is demulcent, anodyne, astringent, and alterative; used in dysentery, diarrhœa, gonorrhœa, whites, and scrofula. An infusion is sometimes used as a gargle in ulcers of the mouth and throat, and as an injection in leucorrhœa. Dose of the infusion, from two to three fluid ounces.

Wild Cherry (*Prunus Virginiana*). — This tree grows extensively in the American forests, flourishing where the soil is fertile and the climate temperate. The inner bark is tonic and stimulant to the digestive organs, and sedative to the nerves and the circulation. It is much used in consumption, scrofula, and dyspepsia.

Preparations. — Fluid extract, dose, two to three drams, compound fluid extract, dose, half a dram to a dram; infusion, half an ounce to a pint of water, dose, one ounce; syrup, three ounces of fluid extract to thirteen ounces of simple syrup, dose, two drams to an ounce.

Wild Cucumber (*Momordica Elaterium*). — This, sometimes called *squirting cucumber*, is a native of the south of Europe, and is cultivated in Great Britain. It is a powerful hydragogue cathartic, and in large doses causes nausea and vomiting. On account of the watery stools it produces it is much used in dropsical complaints, though the severity of its action forbids its being used alone. Dose, a quarter to half a grain, repeated every hour till it operates; of elaterin, from a sixteenth to a twentieth of a grain, given in solution.

Wild Ginger (*Asarum Canadense*).—This is known by the names of *coltsfoot* and *Canada snake-root*, and is common in all parts of the country. The root is tonic, stimulant, aromatic, expectorant, and diaphoretic. It is used in pains of the stomach, colic, etc. Dose of the powder, half a dram; of the tincture, half a dram to two drams.

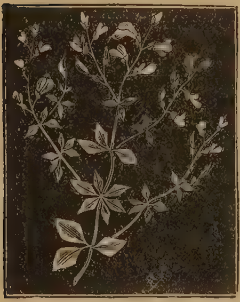


FIG. 241. WILD INDIGO.

Wild Indigo (*Baptisia Tinctoria*, Fig. 241).—This perennial shrub is found in most parts of the country. The bark of the root is purgative, emetic, stimulant, astringent, and antiseptic. It is chiefly used for its antiseptic properties. For external use it is valuable as a wash or gargle for various ulcers, mercurial sore mouth, and scrofulous and syphilitic ophthalmia.

Preparations.—Fluid extract, dose, a quarter to half a dram; tincture, two ounces to a pint of diluted alcohol, dose, two to four drams; infusion, dose, half an ounce; baptisin, the active principle, a quarter to half a grain; gargle, four ounces of fluid extract to twelve ounces of water, to be used as occasion requires.

Wild Yam (*Dioscorea Villosa*).—A perennial vine, found mostly at the South. The root is antispasmodic, and is successfully used in bilious colic. It is said to bring relief in the most violent cases of this complaint. It allays nausea and spasms during pregnancy. It is given in the form of decoction, two or three fluid ounces every thirty or forty minutes. Dose of the tincture, from a quarter of a dram to a dram; of dioscorein, the active principle, one to three grains.

Willow (*Salix Alba*).—The willow is common in Europe and America. Its bark is tonic and astringent, and is used, occasionally, as a substitute for Peruvian bark in intermittent fever. It is also employed in the treatment of chronic diarrhœa and dysentery. Dose of the powdered bark, one dram; of the decoction, one to two fluid ounces. Salicin, the active principle, is given, sometimes, in place of quinine; dose, from two to eight grains.

Wintergreen (*Gaultheria Procumbens*).—This evergreen grows in mountainous, barren regions, throughout our country. The leaves are an agreeable stimulant, aromatic and astringent. Used for chronic diarrhœa, and as an emmenagogue. The oil and essence are useful in flatulent colic; dose of the oil, from five to eight drops, on sugar; of the essence, twenty to thirty drops. Much used to flavor other medicines.

Witch-Hazel (*Hamamelis Virginica*, Fig. 242).—This derives its name from its having fruit and flowers together on the same tree. It is found in most parts of our country. The bark and leaves are tonic, astringent and sedative. It is used in bleeding from the lungs and stomach, and in diarrhœa, dysentery, and excessive mucous discharges. It is also used in incipient consumption, and for sore mouth, etc.

Preparations. — Fluid extract, dose, one to two drams; infusion, dose, three drams; syrup, four ounces of fluid extract to twelve ounces of simple syrup, dose, one to two drams.

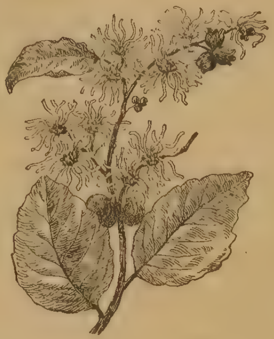


FIG. 242. WITCH-HAZEL.

Wolfsbane (*Aconitum Napellus*, Fig. 243). — This has already been described under its other common name, which is *monkshood*. See "Monkshood" for its description.

Wormseed (*Chenopodium Anthelminticum*). — This perennial is called *Jerusalem oak*, and is found in waste places all over the United States. An oil is extracted from the seeds, which, in doses of from three to five drops, morning and evening, for a child, destroys worms. A strong infusion of the tops has a similar effect. The remedy should be used four or five days, and be followed by a purge.

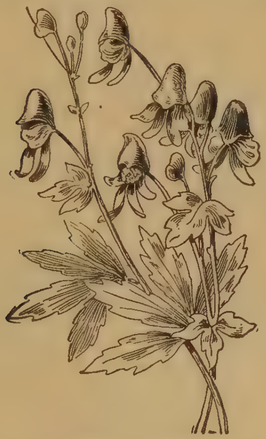


FIG. 243. WOLFSBANE.

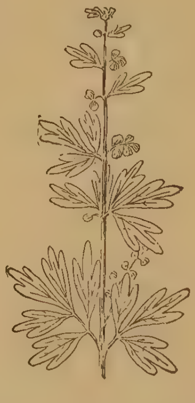


FIG. 244. WORMWOOD.

Wormwood (*Artemisia Absinthium*, Fig. 244). — The tops and leaves of this perennial are tonic and anthelmintic; used in intermittent fever, jaundice, and worms. It restores the appetite in a weakened state of the digestive organs, and is also useful in amenorrhœa. It is excellent applied as a tincture, or in the form of fomentation, to bruises, sprains, and local inflammations.

Preparations. — Fluid extract, dose, one-third to two-thirds of a dram; solid extract, dose, three to five grains; tincture, two ounces to fourteen ounces of diluted alcohol, dose, two to three drams;

syrup, two ounces fluid extract to six ounces of simple syrup, dose, one to two drams.

Yarrow (*Achillea Millefolium*). — A perennial herb, common to the Old World and New, and growing in old fields and along fences. It is tonic, astringent, and alterative, and has been used in intermittent fever, bleeding from the lungs, excessive menstruation, wind colic, and chronic dysentery. Dose of the infusion, a wineglassful three or four times a day.

Yeast (*Cerevisiæ Fermentum*). — Yeast is slightly tonic and stimulating, and has been used with advantage in typhoid fever; also in scarlet fever, and in all diseases where there is a disposition to putridity. The dose is from one to two fluid ounces every two or three hours. It makes an excellent antiseptic poultice for unhealthy and fetid ulcers, especially if combined with powdered slippery-elm bark and charcoal.

Yellow Dock (*Rumex Crispus*, Fig. 245). — The root of this perennial plant is alterative, tonic, diuretic, and detergent, and is regarded as very valuable in the treatment of scrofula, syphilis, leprosy, scurvy, and other skin diseases.

Preparations. — Fluid extract, dose, one to two drams; solid extract, dose, four to five grains; syrup, four ounces of fluid extract to twelve ounces of simple syrup, dose, half an ounce to an ounce; rumin, the active principle, dose, two to three grains.

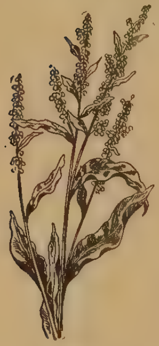


Fig. 245.
Yellow Dock.

Yellow Jessamine (*Gelseminum Sempervirens*).— This abounds in the Southern States, where it is cultivated as an ornamental vine. The root is a powerful febrifuge, narcotic and relaxant, controlling and subduing fever, quieting nervous irritability and excitement, equalizing the circulation, promoting perspiration, and rectifying the secretions. It is much used by the Eclectics of the Western States, but the general judgment of the profession is that it is too powerful a remedy to be safe. My own opinion is, that the American hellebore is equally effective with the yellow jessamine, and that its general use involves far less danger.

Preparations. — Fluid extract, dose, two to ten drops; tincture, four ounces to a pint of alcohol, dose, fifteen to thirty drops, and increase; gelseminin, the active principle, dose, half a grain to a grain and a half.

Yellow Ladies' Slipper (*Cypripedium Pubescens*).—This perennial plant is called *American valerian*, *nerve-root*, etc. The fibrous roots are tonic, nervine, antispasmodic and diaphoretic, and are used in nervous headache, nervous excitability, hysterics, neuralgia, and St. Vitus's dance. Dose of the powder, from ten to twenty grains.

Preparations.—Fluid extract, dose, half a dram to a dram; solid extract, dose, five to ten grains; tincture, two ounces to a pint of diluted alcohol, dose, half an ounce to an ounce; syrup, four ounces of fluid extract to fourteen ounces of simple syrup, dose, two to three drams; cypripedin, the active principle, dose, two to three grains.

Yellow Parilla (*Menispermum Canadense*).—This is a perennial plant, growing in woods and near streams, throughout the country. The root has the properties of a tonic, laxative, alterative, and diuretic. It is valued in the treatment of scrofula, syphilis, skin diseases, gout, rheumatism, dyspepsia, general debility and chronic inflammation of the stomach and bowels. Dose of the decoction, from two to three fluid ounces, three times a day; of the solid extract, from two to three grains.

Zinc.—Several preparations of this metal are used in medicine, as follows:—

Acetate of Zinc (*Zinci Acetas*).—This is used as an external remedy only, generally as an astringent wash for inflammations of the eye, and as an injection in gonorrhœa, but only after the acute stage of these diseases has past. The strength of these solutions generally should be one or two grains to a fluid ounce of soft water.

Chloride of Zinc (*Zinci Chloridum*).—This is a powerful escharotic, and is employed as an external application to cancers and obstinate ulcers. A weak solution of it is occasionally employed in old chronic gleet, also in whites and purulent discharge from the neck of the womb.

Iodide of Zinc (*Zinci Iodidum*).—This is in the form of white needles, and is tonic and astringent. It is not much used, except externally, being applied in a solution of twenty grains to a fluid ounce of water, to enlarged tonsils, by means of a camel's-hair pencil or a piece of sponge tied to the end of a stick.

Oxide of Zinc (*Zinci Oxidum*).—This is an inodorous white powder, insoluble in water and alcohol. It is tonic and antispasmodic, and is given in chorea, epilepsy, whooping-cough, and other similar diseases; but it is more especially employed to arrest the night-sweats of consumption, for which purpose we have at present no other article of equal efficacy. It is sprinkled externally upon excoriated surfaces, and is used in ointments. Dose, from two to five grains, in the form of pill.

Precipitated Carbonate of Zinc (*Zinci Carbonas Præcipitas.*)—This is employed for the same purpose as prepared calamine, being adapted only to external use.

Prepared Calamine (*Calamina Præparata*).—This is in the form of a pinkish or flesh-colored powder, of an earthy appearance. It is employed only as an external application, being dusted on ex coriations and superficial ulcerations, as a mild astringent. It should be a very fine powder.

Sulphate of Zinc (*Zinci Sulphas*). — This is a colorless, transparent salt, crystallizing usually in small four-sided prisms. It is tonic and astringent, and in large doses, a prompt emetic. Used as a tonic in cases of debility attended with irritation. In obstinate intermittents, it is sometimes conjoined with sulphate of quinia; it is chiefly employed, however, in such spasmodic diseases as epilepsy, chorea and whooping-cough. As an astringent, it is used externally, being applied in solution to bleeding surfaces, as a wash in ophthalmia, and as an injection in whites and chronic gonorrhœa.

Valerianate of Zinc (*Zinci Valerianas*). — This is in white, pearly scales, with a faint odor of valerianic acid. It is tonic and antispasmodic, and is used in the various nervous affections which accompany chlorosis. Dose, one or two grains, several times a day, in the form of a pill.

Vaseline (*Petrolatum*). — This is a transparent, fat-like substance, obtained in the distillation of crude petroleum. It is very extensively used in the domestic materia medica, in the treatment of colds and many other ailments. Its efficacy has been, however, much overrated, its chief utility being that of a neutral, simple unguent, and as a vehicle for the application of more active remedies, for which purpose it is preferable to the animal fats generally employed.

PREPARATIONS.—PHARMACY.

THE preparation of medicines for use constitutes the art of pharmacy. It is the peculiar business of the apothecary. It will not be necessary in these pages to describe his art, in all particulars, but merely as many of the preparations which it is his duty to prepare as are really needed in the treatment of disease. In doing this, I shall classify the preparations alphabetically, and begin with

Cerates.

THESE substances have a degree of hardness midway between ointments and plasters. They may be spread upon leather or linen, without the use of heat, and they do not melt and run when applied to the skin. They are made of wax, or spermaceti, combined with lard or oil. The articles are melted together by a very gentle heat, and during the process of cooling the whole should be well stirred.

Calamine Cerate.—Prepared calamine and yellow wax, each three ounces; lard, one pound. Melt the lard and wax together. When the mixture begins to thicken, on cooling, gradually stir in the calamine.

This is called *Turner's Cerate*, and is useful for burns, excoriations, superficial ulcers, and sores.

Goulard's Cerate.—Take of solution of subacetate of lead, two fluid ounces and a half; white wax, four ounces; olive oil, nine fluid ounces; camphor, half a dram. Mix the wax, previously melted, with eight fluid ounces of the oil; remove from the fire, and when the mixture begins to thicken, gradually pour in the solution of subacetate of lead, stirring constantly, with a wooden spatula, till it becomes cool. Then add the camphor, dissolved in the remainder of the oil.

This is the *cerate of subacetate of lead*, and is used for excoriations, inflamed burns, scalds and chilblains, and for eruptions of the skin. Excellent for blistered surfaces, indisposed to heal.

Half an ounce of this preparation united with half an ounce of simple cerate, and one dram each of calomel and powdered opium, makes a very valuable remedy for various eruptions of the skin, of a local nature.

Resin Cerate. — Take of resin, five ounces; lard, eight ounces; yellow wax, two ounces. Melt together with a gentle heat, and stir till cool.

This is known as *basilicon ointment*, and is used as a gentle stimulant to blistered surfaces, indolent ulcers, burns, scalds and chilblains.

Compound Resin Cerate. — Take of resin, suet, and yellow wax, each a pound; turpentine, half a pound; flax-seed oil, half a pint. Melt together, strain through linen, and stir till cool.

This, under the name of *Deshler's salve*, is popularly used for similar purposes with the resin cerate.

Savin Cerate. — Take powdered savin, two ounces; resin cerate, a pound. Mix the savin with the cerate, previously softened. Used as a dressing for perpetual blisters.

Simple Cerate. — Lard, eight ounces; white wax, four ounces. Melt together and stir till cool.

Used for dressing blisters, wounds, etc., where it is desirable simply to preserve the moisture of the part, and to exclude the air.

Spanish Flies Cerate, known as *blistering plaster.* Take finely powdered Spanish flies, a pound; yellow wax and resin, each seven ounces; lard, ten ounces. To the wax, resin and lard, previously melted together and strained, add the Spanish flies, and, by means of the most gentle heat, keep the mixture in a fluid state for half an hour, stirring occasionally, then remove the heat and stir till cool.

This can be easily spread without the aid of heat, and is used for the purpose of drawing blisters. It is now, however, superseded in a great degree by various preparations, composed for the most part of *cantharidin*, either dissolved in oil, and applied to the skin by means of a piece of paper saturated with it, or incorporated with wax and spread in a very thin layer upon fine waxed cloth, silk, or paper, constituting the blistering cloth, blistering paper, etc.

Confections, Conserves and Electuaries.

These are soft solids, in which medicinal articles are incorporated with sugar, syrup, honey, or some other saccharine matter, for the purpose both of preserving the mass, and of rendering the medicine more palatable and convenient for use.

Aromatic Confection. — Take of aromatic powder, five and a half ounces; powdered saffron, half an ounce; syrup of orange-peel, six ounces; clarified honey, two ounces. Rub the aromatic powder with the saffron; then add the syrup and honey, and beat the whole together in a mortar till they are thoroughly mixed.

Given in debilitated states of the stomach, as a vehicle for other medicines. Dose, ten grains.

Compound Confection of Catechu.—Take of compound powder of catechu, five ounces; simple syrup, five fluid ounces. Add the syrup gradually to the powder, and mix them well.

To be given in diarrhœa and chronic dysentery, in the dose of half a dram to a dram.

Confection of Senna, otherwise called *lenitive electuary*. Take of senna, eight ounces; coriander seeds, four ounces; bruised liquorice-root, three ounces; figs, a pound; pulp of prunes, pulp of tamarinds, pulp of purging cassia, each, half a pound; refined sugar, two pounds and a half; water, four pints. Rub the senna and coriander together and separate ten ounces of the powder with a sieve. Boil the residue with the liquorice-root and figs, in the water, to one half; then press out the liquor and strain. Evaporate the strained liquor, by the most gentle heat, to a pint and a half; then add the sugar and form a syrup. Lastly, rub the pulps with the syrup, added gradually, and, having thrown in the sifted powder, beat all together till well mixed.

This is a pleasant and admirable laxative, being well adapted to the habitual costiveness of pregnant women, and those affected with piles; for this latter purpose, it is still better combined with cream of tartar and sulphur, as described in No. 6 of the prescriptions.

Decoctions.

THESE are solutions of vegetable medicines, obtained by boiling them in water. They differ from infusions, in being subjected to a greater degree of heat, the water during their preparation being kept up to the boiling point. The process should be conducted in a covered vessel, and the boiling must not be continued for a very long time. Medicines whose active principle is volatile are not proper for decoctions, the active principle being driven off by heat and lost.

The usual proportion of vegetable substances used in making decoctions is one ounce to a pint of water, and the dose of the decoction, from one to three ounces.

Essences.

THESE are generally prepared by dissolving one ounce of the essential oils of plants in one pint of alcohol. The oils of lemon, peppermint, sassafras, etc., are made in this way, and their properties, of course, are similar to the oils from which they are prepared. They are generally taken in a little sweetened water, in doses of ten drops to a teaspoonful.

Extracts.

THESE are soft solids, obtained by evaporating the tinctures, or solutions, of vegetable substances. The active principles of dried vegetables can only be extracted by some liquid; this, for preparing extracts, is either water or alcohol, or a mixture of the two. Those obtained by the use of water are called *aqueous*, or *watery extracts;* those by means of alcohol, *alcoholic extracts;* and those by both alcohol and water, *hydro-alcoholic extracts.*

Fluid Extracts.

THESE are concentrations, into a small bulk, in liquid form, of the active principles of medicinal substances. They are a valuable class of remedies, being in some cases preferable to tinctures, having less alcohol; and better than extracts or decoctions, because not so often injured by heat in their preparation, and not requiring to be taken in large doses. Great skill is required in their preparation, and they should always be obtained from those who have the reputation of making reliable articles.

Fomentations.

FOMENTATION is a sort of partial or local hot bath, and consists either in the application of cloths dipped in hot water, or some hot medicated decoction, and applied to the affected part, or of bitter or anodyne herbs steeped in vinegar or water, and then, while hot, enclosed in a muslin bag, and laid upon the diseased place. In either case, whether the cloths wet in a decoction of the herbs, or the herbs themselves, slightly steeped, be applied in a bag, the application should be as hot as can be borne, and not so moist as to wet the bed or clothes of the patient.

Fomentations act by their warmth and moisture chiefly: and slightly, in some cases, by their medicinal virtues. Their object is to lessen pain and inflammation, by relaxing the parts, and relieving tension and spasm. They may be prepared from equal parts of hops, tansy, and wormwood, or from equal parts of hops, lobelia, and stramonium, etc., etc.

Infusions.

THOSE made of one article only are sufficiently referred to in previous pages. It will only be necessary here to insert such compound infusions as are deemed important.

Compound Infusion of Catechu. — Take of powdered catechu half an ounce, bruised cinnamon a dram; boiling water a pint; macerate for an hour in a covered vessel, and strain. An elegant mode of administering catechu. Dose, from one to two fluid ounces three or four times a day.

Compound Infusion of Gentian. — Take of bruised gentian half an ounce; dried orange-peel and coriander-seeds, bruised, each a dram; diluted alcohol, four fluid ounces; cold water, twelve fluid ounces.

First pour on the diluted alcohol, then, three hours afterward, the water. Let the whole stand twelve hours, and strain. An excellent form for using gentian. Dose, one fluid ounce three or four times a day.

Compound Infusion of Geranium. — Take of geranium root, sweet bugle-leaves, golden-seal root, witch-hazel bark, each, in coarse powder, one ounce; boiling water, four pints. Mix, and allow all to stand in a covered vessel two hours, applying a gentle heat; then strain. Two drams of alum may or may not be added.

Used in chronic diarrhœa and dysentery, in one or two tablespoonful doses, every two or three hours; also as an injection in gleet, whites, falling of the bowel, etc.; and as a gargle in ulcerations of the mouth and throat.

Compound Infusion of Parsley. — Take of parsley roots and seeds and subcarbonate of iron, each two ounces; horseradish-root, one ounce; squill, juniper-berries, white mustard-seed, mandrake root, and queen of the meadow root, each half an ounce; coarsely bruise these articles, and place them in boiling cider, and expose them for twenty-four hours to a very gentle heat, in a covered earthen vessel. The cider should be sparkling and tart. Let the articles stand in the cider.

Useful in dropsy. Dose, one or two fluid ounces three or four times a day.

Compound Infusion of Senna. — Take of senna and manna, each one ounce; jalap, cream of tartar, and caraway seeds, bruised, each two drams; boiling water, one pint. Add all the ingredients to the water, in a covered vessel, and let them stand twelve hours. Then add four ounces of elixir salutis.

This is a valuable, and not disagreeable, gentle physic for various purposes. Dose, from one to three ounces.

Compound Infusion of Trailing Arbutus. — Take of queen of the meadow root, dwarf-elder bark, marshmallow root, and trailing arbutus, each, coarsely bruised, half an ounce; add to them one pint of boiling water and one pint of Holland gin, and steep by the fire four hours, in a closely covered vessel. Strain, and sweeten with honey.

Excellent for gravel, suppression of urine, scalding of urine, and various other disorders of the urinary organs. Dose, from an ounce to a wineglassful, with more or less frequency, according to the urgency of the case.

Injections. — *Clysters.*

THESE are preparations to be introduced into the lower bowel by means of a syringe. A sufficient number of them are given among the recipes. It is not necessary to repeat them here.

Liniments.

THESE are liquid preparations, generally a little thicker than water, and thinner than oils, intended only to be applied to inflamed, painful, or swelled parts. They are designed to soothe, or quiet, or stimulate, or make red the part to which they are applied; and are rubbed on with the hand, or a piece of flannel or cotton, and frequently in connection with heat, by sitting or standing before a fire.

A large number of liniments are given under the head of recipes. To those I add a few valuable ones here.

Camphor Liniment. — Take six drams of camphor, and dissolve it in one fluid ounce of chloroform, and add to this one fluid ounce of olive oil.

For sprains, neuralgia, rheumatism, etc.

Compound Camphor Liniment. — Take two ounces and a half of camphor, a fluid dram of oil of lavender, seventeen fluid ounces of alcohol, and three fluid ounces of strong solution of ammonia. dissolve the camphor and oil in the alcohol; then add the ammonia, and shake till they are mixed.

To be used as a rubefacient and anodyne for local pains, particularly rheumatism.

Compound Liniment of Ammonia. — Take five fluid ounces of strong water of ammonia, two fluid ounces of tincture of camphor, and one fluid ounce of spirit of rosemary. Mix them well together.

This is used as a prompt and powerful rubefacient, or even vesicatory, in neuralgia, rheumatism, gout, spasms, and inflammations.

Croton Oil Liniment. — Take one fluid ounce of croton oil and seven fluid ounces of oil of turpentine. Mix, and shake them well together.

A good rubefacient and pustulating preparation to apply to the chest and other parts.

Liniment of Opium. — Take six ounces of Castile soap, an ounce and a half of opium, three ounces of camphor, six fluid drams of oil of rosemary, and two pints of alcohol. Macerate the soap and opium in the spirit for three days; then filter, and add the oil and camphor, and shake briskly.

This is a useful anodyne and rubefacient liniment for bruises, sprains and pains of a rheumatic and gouty nature.

Liniment of Spanish Flies. — Take an ounce of powdered Spanish flies, and half a pint of oil of turpentine. Mix, and apply gentle heat to them, in a covered vessel, for three hours. Then strain.

Employed with advantage externally in the sinking stage of typhoid fevers. If so powerful as to cause blistering, it may be weakened by adding flax-seed or olive oil.

Liniment of Turpentine. — Take half a pint of oil of turpentine, and a pound of resin cerate. Melt the cerate, and add the oil to it, mixing them well.

This is a valuable remedy for scalds and burns, and should be applied soon after the accident, and be discontinued when the inflammation excited by the fire is removed. The burned or scalded surface should be covered with lint wet with the liniment.

Opodeldoc. — Take three ounces of white bar soap, sliced, an ounce of camphor, a fluid dram each of oil of rosemary and oil of origanum, and a pint of alcohol. Digest the soap in the alcohol by means of a gentle heat until it is dissolved; then add the camphor and oils, and when they are dissolved pour the whole into broad-mouthed vials.

This is the *camphorated soap liniment*, and is used as an anodyne application to sprains, bruises, painful tumors, etc.

Medicated Waters.

THOSE preparations consisting of water impregnated with some medicinal substance are called medicated waters. They are prepared from volatile oils by triturating in a mortar a dram of the oil, more or less, with a small quantity of carbonate of magnesia, and then very gradually pouring on one quart of water, while the trituration is continued. At last the preparation is filtered through paper. The quantity of oil, magnesia, and water, used for each preparation, is as follows:

Oil of bitter almonds, sixteen minims; carbonate of magnesia, a dram; water, one quart.

Oil of cinnamon, half a fluid dram; carbonate of magnesia, a dram; water, one quart.

Twenty minims of oil of roses, a dram of carbonate of magnesia, and one quart of water.

Oil of fennel, half a fluid dram; carbonate of magnesia, a dram; water, a quart.

Peppermint-water, spearmint-water, and pennyroyal-water, are all prepared from the same quantities of their several oils as cinnamon-water.

The dose of these waters is half a fluid ounce to two fluid ounces, except the bitter almond water, which is one or two fluid drams.

Camphor Water — Take two drams of camphor, forty minims of alcohol, four drams of carbonate of magnesia, and one quart of water. Rub the camphor first with the alcohol, afterwards with the carbonate of magnesia, and lastly with the water, gradually added. Then filter through paper.

Medicated Wines.

WINES are used in making certain preparations, because the alcohol they contain will extract from plants, etc., some medicinal properties which water will not, and at the same time is less stimulating than the tinctures, etc., made from alcoholic spirits.

Compound Wine of Comfrey (*Restorative Wine Bitters*). — Take one ounce each, bruised, of comfrey, Solomon's seal, and spikenard; and half an ounce each, bruised, of chamomile flowers, colombo, and gentian. Cover these with boiling water, and let them stand twenty-four hours in a covered vessel. Then add two quarts of sherry wine. Macerate fourteen days, express and strain.

Valuable in leucorrhœa and other female complaints. Dose, from half a fluid ounce to two fluid ounces, three or four times a day.

Compound Wine of Golden Seal. — Take one dram each, bruised, of golden seal root, tulip-tree bark, and bitter-root, half a dram of pulverized cayenne, and two quarts of sherry wine. Macerate for fourteen days, with occasional shaking; then express and strain.

This is a pleasant bitter tonic in dyspepsia, etc. Dose, from half a fluid ounce to two fluid ounces, three times a day.

Wine of Ipecacuanha. — Take two ounces of bruised ipecac, and one quart of sherry wine. Macerate fourteen days, with occasional shaking. Then express, and filter through paper.

This is a valuable emetic preparation, — especially for children. Dose, as an emetic, for an adult, one fluid ounce; as an expectorant, from ten to thirty minims; for a child two years old, as an emetic, one fluid dram, repeated every fifteen minutes till it operates.

Mixtures.

THESE are preparations in which medicinal substances which cannot be dissolved in water are suspended in it by means of some viscid matter, like sugar or gum-arabic. Their object is to conceal the taste, prevent the sickening effect, and make it more easy to take disagreeable medicines. To make a perfect mixture requires skill. Generally, the medicines to be suspended should be triturated in a mortar with the sugar, gum-arabic, etc., before the water is added.

Almond Mixture. — Take half an ounce of sweet almonds, half a dram of powdered gum-arabic, two drams of sugar, and eight fluid ounces of water. Soak the almonds in the water, and, having removed their external coat, beat them with the gum-arabic and sugar in a mortar, till they are thoroughly mixed; then rub the mixture, gradually adding the water, and lastly, strain.

This is an agreeable, nutritive demulcent, in bronchial, dysenteric, and urinary affections. It must be used freely, the dose being from two to five fluid ounces.

Chalk Mixture. — Take half an ounce of prepared chalk, two drams each of refined sugar and powdered gum-arabic, and four fluid ounces each of cinnamon-water and water. Rub them together till they are thoroughly mixed.

This is much used in looseness of the bowels, accompanied with acidity, particularly among children. If an increase of its astringency be required, add laudanum, or kino, or catechu.

Compound Mixture of Iron. — Take a dram of myrrh, twenty-five grains of carbonate of potassa, one scruple of powdered sulphate of iron, half a fluid ounce of spirit of lavender, one dram of refined sugar, and seven and a half fluid ounces of rose-water. Rub the myrrh in a mortar, gradually adding the rose-water, then mix with these the spirit of lavender, sugar, and carbonate of potassa, and lastly, the sulphate of iron. Pour the whole into a glass bottle, and keep it well stopped.

This is considerably used in chlorosis, and other affections requiring the use of iron.

Brandy Mixture. — Take four fluid ounces each of brandy and cinnamon water, the yolks of two eggs, half an ounce of refined sugar, and three drops of oil of cinnamon. Mix them.

A useful stimulant and nutritive draught, to be used in the sinking stage of low forms of fever.

Extract of Rhubarb and Potassa (*Neutralizing Extract*). — Take two pounds of the best rhubarb, one pound each of cinnamon and golden seal. Grind or coarsely bruise the articles, and mix them; macerate them for two days in one gallon of the best fourth proof brandy. Then express the tincture with strong pressure, and add to it one fluid dram of oil of peppermint, previously dissolved in a little alcohol. Break up the compressed residue from the press, and place it in a percolator, and gradually run warm water through it until the strength is exhausted. Evaporate this solution to four pints, and while the liquor is still hot, dissolve in it two pounds of bicarbonate of potassa, and three pounds of refined sugar. Continue the evaporation, if necessary, until, when added to the tincture first obtained, it will make a gallon and a half, then mix the two solutions together.

This is a useful preparation for diarrhœa, dysentery, cholera morbus, summer complaints of children, acidity of the stomach, heartburn, etc. Dose, one fluid dram.

Metauer's Aperient. — Take one ounce and a half of pulverized aloes, four ounces of bicarbonate of soda, two fluid ounces of compound spirits of lavender and two quarts of water. Place the whole in a jar or jug, and let them stand fourteen days, shaking well once a day. Then pour off from the dregs. It improves by age.

This preparation is one of the best-known aperients for costiveness,—particularly when connected with bilious dyspepsia. For that class of bilious persons who overeat, and have acid stomachs, it has great value. In bilious cases, the nitro-muriatic acid, taken before meals (the aperient *after* meals) may be usefully associated with it. In the constipation of hysteria and hypochondriasis, the fluid extract of valerian may be added to it. Dose, from two drams to an ounce.

Saline Mixture (*White Liquid Physic*).—Take half a pound of sulphate of soda, and one and a half pints of water. Mix, and dissolve the soda; then add two fluid ounces of nitro-muriatic acid, and one dram and eight grains of powdered alum.

Used to allay nausea and vomiting, and as a cooling purgative; also for colic, diseases of the liver, diarrhœa, dysentery, intermittent fevers, etc.

This is one of the remedies of the Eclectic school of physicians, and is held by them in high esteem. Dose, a tablespoonful in a gill of water, to be repeated every hour or two until it causes one or two evacuations from the bowels.

Ointments.

OINTMENTS are composed of fatty substances, about the consistence of butter, impregnated with medicine. All gritty matter should be excluded from them. To prevent the rancidity to which they are liable, a little glycerin is now frequently added.

Ointment of Acetate of Lead.—Take two ounces of white wax and four ounces of lard; melt them together, and add two and a half drams of finely-powdered acetate of lead; stir constantly till cold. This is useful for burns, scalds, ulcers and excoriations.

Ointment of Bayberry.—Take half a pound each of tallow, white turpentine and bayberry, and four ounces of olive-oil; melt together and strain.

Good for scrofulous and indolent ulcers.

Ointment of Belladonna.—Take a dram of extract of belladonna and an ounce of lard; mix them.

A useful anodyne application for painful tumors, neuralgia, etc.

Ointment of Creosote.—Take half a fluid dram of creosote and an ounce of lard; mix them.

A useful application for syphilitic, scrofulous and cancerous ulcers.

Compound Ointment of Galls.—Take six drams of finely-powdered galls, six ounces of lard, and a dram and a half of pulverized opium; rub them together.

A valuable preparation in irritable piles.

Ointment of Red Iodide of Mercury. — Take one dram of red iodide of mercury, and seven drams of ointment of white wax; incorporate them thoroughly together by trituration in a mortar.

Used as a dressing for indolent scrofulous ulcers.

Ointment of Nitrate of Mercury. — Take one ounce of mercury, eleven fluid ounces of nitric acid, nine fluid ounces of fresh neats-foot oil, three ounces of lard. Dissolve the mercury in the acid, then heat the oil and lard together in an earthen vessel to 200° F.; then add the mercurial solution, and stir with a wooden spatula, constantly, as long as effervescence continues, and afterward occasionally till the ointment stiffens.

Milder Ointment of Nitrate of Mercury. — Take an ounce of ointment of nitrate of mercury, and seven ounces of lard; rub them together.

The first of the above two preparations is the *citrine ointment*, and is much and advantageously employed as an external application in porrigo, impetigo, psoriasis and pityriasis. It is nearly a specific for inflammation of the eyelids connected with the formation of scaly matter about the lashes. The second of these two preparations is merely a dilution of the first.

Ointment of Oxide of Zinc. — Take half an ounce of oxide o zinc and three ounces of lard; rub them together.

This is a mild astringent application in chronic ophthalmia, eruptions of the skin, sore nipples, and other excoriations.

Ointment of Poison Hemlock. — Take one dram of extract of poison hemlock and one ounce of lard; rub them together.

An anodyne application for painful swellings, ulcers and piles.

Ointment of Poke. — Take a dram of the extract of poke and one ounce of lard; mix them.

For malignant ulcers, scaldhead, itch, etc.

Ointment of Stramonium. — Take one dram of the extract of stramonium leaves, and one ounce of lard; rub the extract with a little water till it is uniformly soft, and then with the lard.

Used as an external application in irritable ulcers, painful piles and skin eruptions.

Simple Ointment. — Take a pound of white wax, and four pounds of lard; melt them together with a gentle heat, and stir constantly till cold.

Ointment of Rose-Water. — Take a fluid ounce of rose-water, two fluid ounces of oil of almonds, half an ounce of spermaceti, one dram of white wax; melt together, by means of a water-bath, the oil, spermaceti, and wax; then add the rose-water, and stir the mixture constantly till cold.

This is the well-known preparation called *cold cream*, and is used with much advantage for chapped lips and hands, excoriations, etc.

Spermaceti Ointment. — Take five ounces of spermaceti, fourteen of white wax, and a pint of olive-oil; melt them together over a slow fire and stir constantly till cold.

A mild dressing for blisters, wounds and excoriated surfaces.

Tar Ointment. — Take a pound each of tar and suet; melt the suet with a gentle heat, and add the tar to it; then stir constantly till they are cold.

A useful stimulating application to various scaly and scabby eruptions, particularly leprosy and scaldhead.

Ointment of White Hellebore. — Take one ounce of powdered white hellebore root, four ounces of lard, and twelve drops of oil of lemons; rub them thoroughly together.

A useful ointment for the cure of itch.

Ointment of Wild Indigo. — Take one pound of powdered wild indigo root, moisten it thoroughly with alcohol and let it stand twenty-four hours; then put it in a percolator and add alcohol as long as the liquid which passes contains the taste of the root. Distil the alcohol from this filtered tincture until half a gallon of tincture is obtained. Melt one pound of fresh butter, without salt, add the above tincture, and carefully evaporate the rest of the alcohol; stir constantly till cold, after the alcohol has nearly passed off.

This is one of the preparations of the Eclectics, and is a cleansing, detergent, antiseptic and discutient ointment, useful in scrofulous, erysipelatous and malignant ulcers, eruptions of the skin, etc.

Pile Ointment. — Take three handfuls each of witch-hazel bark, white-oak bark and sweet-appletree bark; bruise or grind them, and add to them three pints of water; boil down to one pint and strain; add to this liquid half a pound of lard, and simmer till the water all disappears, stirring continually both before and after removing from the fire till it cools.

This forms a brick-colored anodyne, astringent ointment, admirably adapted to the cure of pile-tumors.

Compound Lead Ointment. — Take two and a half pounds of olive-oil, four ounces each of beeswax and unsalted butter, and half a pound of white turpentine; melt them together, strain, and then heat to nearly the boiling point; then gradually add one pound of red lead, stirring constantly till the mixture becomes black or brown; then remove from the fire, and when it is partly cool, add to it a mixture of twelve ounces of honey and half a pound of powdered camphor.

This is a very healing ointment, and is much used for ulcers, burns, wounds, and skin-diseases.

Compound Sulphur Ointment.—Take one ounce of sulphur, one dram each of ammoniated mercury and benzoic acid, one fluid dram each of sulphuric acid and oil of bergamot, two drams of nitrate of potassa and half a pound of lard. First melt the lard with a gentle heat, then add the other ingredients, stirring constantly till they are cold.

A sovereign remedy for itch.

Pills.

PILLS are small masses of medicinal substances in globular shape, and of a size convenient for swallowing. Each pill generally weighs from four to five grains. Those medicines which cannot be dissolved in water, and are particularly unpleasant to the taste, are usually given in the form of pill. Sugar, or gelatine coated, as now very extensively used for every important medicine, and in a great variety of combinations, they are a very popular form of taking medicine. Physicians cannot do better than to use the pills when made by a reliable firm.

The method of making pills is as follows: If the substance to be worked into pills be a solid extract, add a few drops of water to it, and rub it to the right consistence; if it be a resin, add to it a few drops of alcohol; if it be a soft or liquid substance, rub up with it some inert substance, or crumb of bread, or wheat flour, or starch, or pulverized gum-arabic; if it be a powder, mix it with some soft substance, as confection, or syrup, molasses, honey, or mucilage of gum-arabic. The materials must be well mixed and rubbed into a uniform mass, which should be rolled with a spatula or knife into a cylinder of just the same size throughout. This is to be divided equally into the number of pills required, each of which is rolled into a spherical form between the thumb and finger, or upon the palm.

So many valuable pills are prescribed among the "Recipes," that it is not necessary here to add to their number.

Plasters.

PLASTERS are composed of wax, resins, gums, fats and oils, and sometimes medicinal substances, and are spread upon linen, muslin, or leather. When cold they are hard; but when brought to the warmth of the human body, they so far soften as to adhere firmly to the skin, but do not "run" so as to spread outward and soil the under-clothes. They are intended generally to excite and irritate the skin; sometimes as mechanical supporters, and sometimes to affect the system by having their medicinal matters absorbed.

Belladonna Plaster.—Take three ounces of resin plaster, and an ounce and a half of extract of belladonna, add the extract to the plaster previously melted by a gentle heat, and mix.

A useful anodyne application in neuralgia, rheumatic pains, and dysmenorrhœa.

Compound Capsicum Plaster. — Melt together half a pound of resin and two ounces of beeswax; to this add one pint of spirit in which two ounces of powdered cayenne, enclosed loosely in a linen bag, has been digested one hour by a gentle heat; evaporate the spirit by a moderate heat, and add one ounce of powdered camphor and one fluid dram and a half of oil of sassafras; stir constantly till cold.

This may be used whenever a stimulating plaster is required.

Compound Galbanum Plaster. — Take two ounces of galbanum, three ounces of burgundy pitch, half an ounce of resin, half an ounce of yellow wax, and four ounces of lead plaster; melt them all together over a gentle fire.

This is a valuable strengthening plaster, and may be used for weakness of various parts, as well as for scrofulous enlargement of glands and joints.

Compound Lead Plaster. — Take one pound of lead plaster; melt it by a moderate heat, and then add two fluid ounces each of linseed oil and tincture of opium, six fluid ounces of oil of turpentine, and two-thirds of a pound of oil of origanum; stir together till cold.

Used for burns, scalds, chilblains, etc.

Compound Resin Plaster. —Take three pounds of resin, four ounces each of beeswax and hemlock gum; melt the articles together, then remove from the fire, and, when nearly cold, add gradually one fluid ounce each of oil of hemlock, oil of sassafras, and olive oil, with half an ounce of camphor, dissolved in them, and half a fluid ounce of oil of turpentine. Pour the whole into cold water, and work in the hands till cold, forming it into rolls.

This is an excellent strengthening plaster, useful for rheumatism, enlarged joints, glands, and wherever a weakened part needs gentle stimulation and support.

Spiced Plaster.— Take one ounce each of powdered ginger, cloves, cinnamon and black pepper; one dram of pulverized cayenne; half a fluid ounce of tincture of ginger, and a sufficient quantity of honey. Mix the powders, and then add the tincture and honey to form a stiff poultice.

This is applied with great advantage over the stomach in cases of nausea and vomiting.

Compound Tar Plaster. — Boil three pounds of tar half an hour, then add one pound and a half of burgundy pitch, one pound of white gum turpentine (after having melted them together and strained). Stir together, then remove from the fire and add ten ounces each of finely-powdered mandrake-root, bloodroot, poke-root and Indian turnip; mix thoroughly together.

This is an irritant, rubefacient, suppurative plaster, and is considerably used by the Eclectics to produce counter-irritation and revulsion in neuralgia, rheumatism and other painful affections, as well as in chronic inflammation of internal organs. To be spread thinly on soft leather, and renewed daily on the same leather Four days are required to produce suppuration. If it produce great pain or inflammation, remove it, and apply mutton-tallow or elm-poultice.

Lead Plaster. — Take one pound and a quarter of very finely powdered semivitrified oxide of lead, one quart of olive oil and half a pint of water. Boil together over a gentle fire, stirring constantly till the oil and litharge unite and form a plaster. If the water nearly all evaporates before the process is completed, add a little boiling water.

A useful plaster for ulcers, burns, excoriated surfaces, etc.

Red Oxide of Lead Plaster. — Melt together one quart of olive-oil and one ounce each of beeswax and resin ; heat to the boiling point, and then add gradually three-quarters of a pound of powdered red-lead. Stir constantly, and when the oil has taken up the lead, the mixture will be brown or shining black ; then remove from the fire, and when nearly cold add four scruples of powdered camphor, and stir together. It should not be removed from the fire until it has acquired a proper consistence for spreading, which may be easily ascertained by allowing a portion of it to cool on a knife.

This is a valuable plaster for scrofulous and syphilitic ulcers, also for burns, scalds, and several skin-diseases.

Poultices. — *Cataplasms.*

Bread-and-Water Poultice. — Put the needed quantity of boiling water in a basin; throw in crumbled white bread, or cracker, and cover with a plate. When the bread or cracker has soaked up all it will, drain off the remaining water. Spread one-third of an inch thick, and apply.

Flaxseed Poultice. — Put boiling water in a basin, and stir in flaxseed meal to make a thick paste. Spread on linen and apply.

Yeast Poultice. — Mix half a pint of yeast with one pound of flaxseed-meal. Stir carefully while heating.

Carrot Poultice. — Boil the proper quantity of carrots till they are quite soft. Strain off the water, mash them to a pulp, and add a little lard or sweet oil to prevent them from getting hard, then spread. A good application for malignant and offensive sores.

Oatmeal Poultice. — Place hot water in a basin, and stir in oat meal slowly, while it boils, till the poultice is of the right thickness · that is, till it will not run on the rag on which it is spread.

Indian-Meal Poultice. — Made the same as oatmeal poultice.

Arrow-Root Poultice. — Mix two or more tablespoonfuls of arrow root with a little cold water, in a basin, till it is all united with the water. Then add boiling water, and stir till the whole becomes a thick paste.

Slippery Elm Poultice. — Stir ground slippery-elm bark into hot water, and let it swell. This is a very soothing poultice for irritable sores.

Onion Poultice. — Made in the same way as the carrot poultice. This is quite stimulating, and induces indolent sores to maturate more freely. It is excellent for slow boils.

Charcoal Poultice. — Take either the bread-and-milk, or the Indian-meal poultice, and stir into it one-quarter its bulk of finely pulverized charcoal. Excellent for thoroughly cleansing a foul sore or ulcer.

Anodyne Poultice. — Take half an ounce of the extract either of foxglove, or henbane, or stramonium, or conium, or belladonna, and mix it with half a pint of tepid water. Then stir in as much flaxseed meal as will make a poultice of the right thickness. Always be careful not to apply this poultice where there is much skin off, lest the extract used be so much absorbed as to produce poisonous effects. These poultices allay the pain of cancerous and other sores.

Lobelia Poultice. — Powdered lobelia and ground slippery-elm bark, each, one ounce. Stir these into hot weak lye, to make a poultice. For wounds, fistula, whitlow, boils, erysipelas and stings of insects.

Poke-Root Poultice. — Roast a sufficient quantity of fresh poke-root in hot ashes. When it is quite soft, pound it, and make a poultice. To be applied to tumors to scatter them, or hasten their suppuration. To be removed every four hours.

Mustard Poultice. — Stir up a tablespoonful of ground mustard with a little water, to the consistence of paste. Spread upon linen or brown paper, and cover with thin muslin, that the mustard may not stick to the skin when the poultice is removed. They can now be bought all prepared, either on paper or cloth, of several different degrees of strength, and are much better than the home-made.

Powders.

A SINGLE substance used as a powder is called a *simple powder;* two or more united, a *compound powder.* Under the above head, I shall describe only compound powders. In preparing compound powders, the substances, if of different degrees of hardness, should generally be pulverized separately. Many powders require to be excluded from the light, which may be done by covering the bottles in which they are kept with black varnish.

Aromatic Powder. — Take two ounces each of cinnamon and ginger, and an ounce each of cardamom deprived of the capsules, and grated nutmeg. Rub them together into a very fine powder, and keep in well-stopped bottles.

The powder is stimulant and carminative, and in cases of weakened digestion, may be given in ten to thirty-grain doses.

Compound Powder of Aloes and Canella.— Take a pound of aloes and three ounces of canella. Rub them separately to a fine powder, and mix them.

This is the preparation known as *hiera picra*, or simply *picra*. It may be used for amenorrhœa, or generally as a bitter to correct costiveness, and improve the appetite.

Compound Powder of Catechu.— Take two ounces each of catechu and kino, and half an ounce each of cinnamon and nutmeg. Reduce all to a fine powder, mix and pass them through a fine sieve.

For chronic diarrhœa, dysentery, etc. Dose, from fifteen to thirty grains.

Compound Powder of Chalk. — Take half a pound of prepared chalk, four ounces of cinnamon, three ounces each of tormentil and gum-arabic, and half an ounce of long pepper. Rub them separately into a very fine powder, and mix.

This powder is warm, stimulant, astringent and antacid, and is well fitted for diarrhœa not connected with inflammation.

Compound Powder of Chalk with Opium.— Take six ounces and a half of compound powder of chalk, and four scruples of powdered opium. Mix them.

The opium in this preparation increases the efficacy of the compound powder of chalk in diarrhœa. Dose for an adult, ten to fifteen grains, and repeated after each discharge.

Compound Powder of Golden Seal. — Take two drams each of powdered golden seal, blue cohosh and helonias, and mix them.

Useful in dyspepsia, chronic inflammation of the mucous membrane of the stomach, etc. Dose, half a teaspoonful to a teaspoonful, three or four times a day.

Compound Powder of Hydrastin. — Take half a dram each, in powder, of hydrastin, leptandrin, rhubarb and myricin. Mix thoroughly, and divide into thirty-two powders.

This is tonic and laxative, and is useful in dyspepsia, jaundice, chronic inflammation of the bowels, and during recovery from exhausting complaints. One powder may be taken often enough to produce one movement of the bowels a day.

Inhaling Powder.—Take one dram of crystals of nitrate of silver, and two and a half drams of lycopodium. Work the lycopodium into a very stiff paste, with a little warm water, in which the nitrate is dissolved. Spread this thin in a shallow dish, cover it so as to shut out the light, and set it where it will dry; when thoroughly dry, pulverize.

I have used this powder with great advantage in many cases of bronchitis, by directing three to four grains of it to be inhaled once a day, in an instrument constructed for that purpose. This is the only really valuable *catarrh snuff* ever used. A pinch of it taken once a day (never oftener) for nasal catarrh, will often do excellent service.

Compound Powder of Ipecacuanha.—Take a dram each of powdered ipecacuanha and opium, and one ounce of sulphate of potassa. Rub them together into a fine powder.

This is the well known *Dover's powder.* It is an admirable anodyne and diaphoretic, and is much used in inflammatory complaints, particularly rheumatism and pneumonia, complicated with low typhoid symptoms. Dose, from five to ten grains.

Compound Powder of Jalap. — Take half an ounce of pulverized jalap and senna, one ounce of pulverized bitartrate of potassa, half a dram of pulverized ginger, and ten grains of pulverized cayenne. Mix thoroughly.

This is a valuable purgative medicine, and may be used in most cases where a simple cathartic is required. Dose, half a teaspoonful to a tablespoonful.

Compound Powder of Kino. — Take fifteen drams of kino, half an ounce of cinnamon, and a dram of dried opium. Rub them separately to a very fine powder, and mix them.

This is anodyne and astringent, and is useful in diarrhœa, etc.

Compound Powder of Rhubarb.— Take four ounces of powdered rhubarb, one pound of magnesia, and two ounces of finely powdered ginger. Mix thoroughly, and preserve in well stopped bottles.

An excellent laxative and antacid, and well adapted to the bowel-complaints of children.

Compound Powder of Rhubarb and Potassa (*Neutralizing Powder*).— Take half an ounce each of powdered rhubarb, bicarbonate of potassa and peppermint leaves. Mix thoroughly.

Valuable in diarrhœa, cholera morbus, dysentery, summer complaint of children, sour stomach, heartburn, etc.

Worm Powder. — Take one ounce each of powdered white Indian-hemp root (*Asclepias incarnata*), mandrake, pink-root, and bitter-root; two ounces of powdered balmony, and four scruples of powdered aloes. Mix thoroughly.

A very good remedy for all kinds of worms. A teaspoonful of the powder may be mixed with a gill of molasses, and a teaspoonful of this given to a child every hour or two till it operates. After this, give a teaspoonful three times a day, for a few days.

Syrups.

A STRONG solution of sugar and water is a *simple syrup*. When the water is first charged with some medicinal substance, and sugar is added to this, we have a *medicated syrup*. Refined sugar should always be preferred in preparing medicated syrups.

Simple Syrup. — Take two and a half pounds of refined sugar, and a pint of water; dissolve the sugar in the water by heat, remove any scum that may arise, and strain while hot.

Syrup of Almonds. — Take a pound of sweet almonds, four ounces of bitter almonds, three pints of water, and six pounds of refined sugar. Blanch the almonds, then rub them in a mortar to very fine paste, and add, during the trituration, three fluid ounces of the water, and one pound of the sugar. Mix the paste thoroughly with the remainder of the water. Strain with strong expression, add the remainder of the sugar to the strained liquor, and dissolve by a gentle heat. Strain through fine linen, and after it is cool, put it into bottles, thoroughly stopped, and keep in a cool place.

This is demulcent, nutritive and sedative, and is sometimes added to cough mixtures, etc.

Syrup of Citric Acid. — Take two drams of powdered citric acid, four minims of oil of lemons, and two pints of syrup. With one fluid ounce of the syrup, rub the citric acid and oil of lemons, then add the remainder of the syrup, and dissolve by a gentle heat.

This is much employed as an agreeable and cooling addition to drinks, especially to carbonic-acid water. Tartaric acid, being cheaper than citric acid, is often substituted for it, and the preparation thus made is much sold under the name of *lemon syrup*.

Syrup of Garlic. — Take six ounces of fresh garlic, sliced and bruised, one pint of diluted acetic acid, and two pounds of refined sugar. Macerate the garlic in ten fluid ounces of the diluted acetic acid in a glass vessel, four days, and express the liquor. Then mix the rest with what remains of the acid, and again express, till sufficient has passed to make the whole when filtered measure a pint Then pour the filtered liquor on the sugar in a bottle, and shake till it is dissolved.

Excellent in the bronchial affections of children. Dose, a teaspoonful, for a child a year old.

Syrup of Ginger. — Add two fluid ounces of tincture of ginger to a quart of simple syrup; evaporate the alcohol by a gentle heat.

This is carminative and stimulant, and gives tone to the debilitated stomach, removing wind, etc. It is added to other medicines to improve their flavor.

Compound Syrup of Hypophosphites.— Take 256 grains of hypophosphite of lime, 192 grains of hypophosphite of soda, 128 grains of hypophosphite of potassa, 96 grains of recently precipitated hypophosphite of iron, 240 grains of hypophosphorous acid solution, 12 ounces of white sugar, half an ounce of extract of vanilla, and a sufficient quantity of water. Dissolve the salts of lime, soda and potassa, in six ounces of water; put the iron salt into a mortar and gradually add solution of hypophosphorous acid till it is dissolved; to this add the solution of the other salts, after it has been rendered slightly acidulous with the same acid, and then water, till the whole measures nine fluid ounces. Dissolve this in sugar, with heat, and flavor with the vanilla. Without flavoring, this syrup is not unpleasant, being slightly saline, and not at all ferruginous. Any other flavoring may be used, as orange-peel, orange-flower or ginger. It is also suggested to physicians that glycerine may be used, wholly or partially, in place of sugar, when indicated, six ounces and a half of glycerine being substituted for twelve ounces of sugar. Dose, a teaspoonful, three times a day before meals.

Syrup of Ipecacuanha. — Take one ounce of ipecacuanha, in coarse powder, one pint of diluted alcohol, two pounds and a half of sugar, and one pint of water. Macerate the ipecacuanha in the alcohol, fourteen days, and filter; evaporate the filtered liquor to six fluid ounces, filter again, and add water to make the liquor measure a pint; then add the sugar, and proceed as directed for syrup.

This is chiefly used in complaints of children. Dose, as an emetic, for an adult, two fluid ounces; for a child a year or two old, one or two fluid drams. As an expectorant, for an adult, two fluid drams; for a child, five to twenty minims.

Syrup of Lemons. — Take a pint of strained lemon-juice, two pounds and a half of refined sugar, and two and a half fluid ounces of rectified spirit; boil the juice ten minutes, and strain; then add the sugar, and dissolve. After the syrup has cooled, mix the spirit with it.

A cooling and grateful addition to drinks in fevers, and serves to cover the taste of salts and other purgatives.

Aromatic Syrup of Rhubarb. — Take two ounces and a half of bruised rhubarb, half an ounce each of bruised cloves and cinnamon, two drams of bruised nutmeg, two pints of diluted alcohol, and six pints of syrup. Macerate the rhubarb and aromatics in the alcohol for fourteen days, and strain; then, by a gentle heat, evaporate the liquor to a pint, and, while hot, mix it with the syrup previously heated.

This is a warm cordial laxative, admirably fitted for the bowel complaints of infants. Dose, a fluid dram, repeated every two hours till it operates.

Syrup of Seneka. — Take four ounces of fluid extract of seneka, and one pint of water; mix, and dissolve in the liquid one pound of refined sugar, and proceed as directed for syrup.

This is a stimulating expectorant, used in colds, coughs, etc., after inflammatory symptoms have subsided. Dose, for an adult, one or two teaspoonfuls, as often as necessary.

Syrup of Squill. — To one pint of vinegar of squill, add two pounds of refined sugar, and proceed as directed for syrup.

It is a useful expectorant for coughs and bronchial affections of infants and children. Dose, half a dram to a dram.

Syrup of Tolu. — Take two fluid ounces of tincture of tolu, and one pint of simple syrup; mix, and gently heat the mixture to evaporate the alcohol.

This is chiefly used to flavor other preparations.

Syrup of Wild-Cherry Bark. — Place two pounds and a half of coarsely powdered wild-cherry bark in a percolator, and pass through it one gallon of water. Strain this and dissolve in it by heat sixteen pounds of refined sugar.

This makes an elegant tonic and sedative preparation, and is mixed with various other articles in prescribing for dyspepsia, consumption, etc.

Compound Syrup of Partridge Berry. — Take half a pound of partridge berry, and two ounces each of helonias, blue cohosh, and high cranberry bark; add to them one quart of brandy, and macerate four days. Press out the brandy; and place the herbs in three quarts of boiling water, and boil down to two and a half pints. Strain, add one pound of sugar, and evaporate to two and a half pints. Remove from the fire, and when nearly cold, add the brandy previously pressed out.

This is considerably used by the Eclectic physicians, under the name of *mother's cordial*, and may be usefully employed by all physicians in suppression of the menses, painful menstruation, profuse menstruation and habitual abortions. Dose, from one to two ounces, two or three times a day.

Compound Syrup of Phosphates (*Chemical Food*). — Take ten drams of protosulphate of iron, twelve drams of phosphate of soda, twelve drams of phosphate of lime, twenty drams of phosphoric acid (glacial), two scruples of carbonate of soda, one dram of carbonate of potassa, sufficient quantity of muriatic acid, sufficient quantity of water of ammonia, two drams of powdered cochineal, sufficient water to make twenty fluid ounces, three pounds of sugar, and fifteen drops of oil of orange. Dissolve the sulphate of iron in two fluid ounces of boiling water, and the phosphate of soda in four fluid ounces of boiling water. Mix the solutions, and wash the precipitated phosphate of iron till the washings are tasteless.

Dissolve the phosphate of lime in four fluid ounces of boiling water, with sufficient muriatic acid to make a clear solution, precipitate it with water of ammonia, and wash the precipitate.

To the freshly precipitated phosphates, as thus prepared, add the phosphoric acid, previously dissolved in the water. When clear, add the carbonates of soda and potassa, and afterwards sufficient muriatic acid to dissolve the precipitate.

Now add the cochineal mixed with the sugar, apply heat, and when the syrup is formed, strain and flavor it.

This is an elegant syrup, agreeable both to the eye and taste, and has been extensively sold and used as a nutritive tonic, in chronic debility, in cases of broken down constitution, wasting of the flesh, etc.

Compound Syrup of Rhubarb and Potassa (*Neutralizing Cordial*). — Take half a pound each of powdered rhubarb and bicarbonate potassa, and four ounces each of cinnamon and golden seal; macerate for four days in one gallon of best fourth proof brandy. Express the tincture with strong pressure, and add to it two fluid drams of oil of peppermint, previously dissolved in a little alcohol. Break up the cake from the press, place it in a percolator, and gradually pass through it warm water till the strength is exhausted. Evaporate this solution to four quarts, and while the liquor is still hot, dissolve in it six pounds of refined sugar. Continue the evaporation, if necessary, till the addition of the tincture first obtained will make three gallons. Then add the tincture.

A valuable antacid and laxative in diarrhœa, dysentery, cholera morbus, and summer complaint of children. Dose, for an adult, a tablespoonful, to be taken as circumstances require.

Compound Syrup of Sarsaparilla. — Take a pound each of sarsaparilla, yellow parilla, and pipsissewa; an ounce and a half of guaiacum; one ounce each of red roses, senna, and liquorice root; and three minims each of oil of sassafras, anise, and partridge berry; diluted alcohol, five pints, and four pounds of refined sugar. Grind and mix the sarsaparilla, yellow parilla, pipsissewa, guaiacum, roses, senna, and liquorice, and add to them the alcohol. Let the whole stand fourteen days, then express and filter. Evaporate by a water-bath to one quart, and add the sugar. Lastly, rub the oils in a mortar with a little of the syrup, and thoroughly mix with the remainder.

This is a valuable alterative syrup, and is used for syphilis, scrofula, diseases of the skin, etc. It is much improved by adding half an ounce of the iodide of potassium to each pint of the syrup. Dose, a tablespoonful

Compound Aromatic Syrup of Senna. — Take four ounces of senna, one ounce and a half of jalap root, half an ounce of rhubarb, one dram of cinnamon, one dram of cloves, and half a dram of nutmeg. Reduce these articles to a coarse powder; add one quart of diluted alcohol. Let the whole stand two days and percolate. Filter, dissolve in it one pound of refined sugar, and add one dram of oil of lemons.

An excellent cordial physic.

Compound Syrup of Stillingia. — Take a pound each of queen's root and turkey corn; half a pound each of pipsissewa leaves and elder flowers; and four ounces each of prickly-ash berries and cardamom seeds. Grind all the articles, mix, and place them in a jar, and moisten them well with alcohol. Let them stand two days; then place them in a percolator, and gradually add hot water till two pints are obtained, which must be strained and set aside. Then continue the percolation so long as there is a sensible taste of the spirit. Reserve this also. Then continue the percolation till what is obtained is almost tasteless. Boil down this last till the addition of the two reserved tinctures will make two gallons of the whole. Now add twelve pounds of refined sugar, and make a syrup.

This is one of the Eclectic medicines; and is quite an effective alterative for syphilis, scrofula, etc. Improved by adding iodide of potassium. Dose, from a teaspoonful to a tablespoonful.

Compound Syrup of Yellow Dock. — Take two pounds of yellow-dock root, one pound of the bark of the root of false bittersweet, and half a pound each of American ivy and figwort. Make a syrup according to the directions for compound syrup of stillingia, using sixteen pounds of sugar, and making two gallons of syrup.

A valuable preparation for scrofula. Improved by iodide of potassium. Dose, a tablespoonful, three or four times a day.

Tinctures.

An *ethereal* tincture is one which is made with ether as the solvent instead of alcohol, and an *ammoniated* tincture, one made with water of ammonia as the solvent.

Simple tinctures, in which only one medicinal article is used, are made thus:

Tincture of Aconite.— Take eight ounces of powdered aconite-root, and one pint of alcohol. Mix, and let them stand for two weeks, frequently stirring. Then express, and filter through paper.

Given in fevers and inflammatory diseases. Dose, three drops every hour or two in a little water.

In the above manner all simple tinctures are made. Some medicines require *alcohol* to extract their active principle; some only *diluted alcohol.*

One Ounce to the Pint of Alcohol.—In preparing simple tinctures from the following articles, *alcohol* is used, and *one* ounce only of the medicine is employed to the pint, namely:

Castor, Saffron, Leptandria.

One Ounce to the Pint of Diluted Alcohol. — In making tinctures from the following articles, one ounce is used to the pint of diluted alcohol:

Iodine, Quassia.

Two Ounces to a Pint of Alcohol:

Assafœtida, Camphor, Oil of Peppermint, Oil of Spearmint, Benzoin, Colchicum seeds, Lupulin.

Two Ounces to a Pint of Diluted Alcohol:

Cardamom, Cotton-Bark, Cochineal, Colombo, Colchicum, Ergot, Galls, Hemlock, Cubebs, Foxglove, Black Hellebore, Henbane, Lactucarium, Lobelia, Poke, Shrubby Trefoil, Bloodroot, Squill, Valerian, Bittersweet, Belladonna.

Three Ounces to a Pint of Diluted Alcohol:

Peruvian Bark, Rhatany, Poison Hemlock, Sheep Laurel, Stramonium, White Hellebore, Yarrow, Prickly Elder, Jalap.

Four Ounces to a Pint of Alcohol:

Nux Vomica, Ginger, Guaiacum, Black Cohosh.

Four Ounces to a Pint of Diluted Alcohol:

Yellow Jessamine, Prickly-ash Berries, Ergot, Matico.

The following tinctures embrace those which vary from the above proportions among the simple tinctures, and also the compound tinctures:

Tincture of Orange-Peel. — Take three and a half ounces of dried orange-peel and one quart of diluted alcohol. Macerate for seven days, express and filter.

Tincture of Buchu.— Take five ounces of buchu, and one quart of diluted alcohol. Digest seven days; pour off the clear liquor, and filter.

Tincture of Indian Hemp.— Take of extract of Indian Hemp (Cannabis Indica) one ounce, and one pint of alcohol. Dissolve the extract in the spirit. Dose, from twenty to thirty drops.

Tincture of Cantharides. — Take an ounce of bruised Spanish flies, and two pints of diluted alcohol. Macerate for fourteen days, express and filter through paper.

Dose, from twenty drops to a dram, three or four times a day.

Tincture of Cayenne Pepper. — Take an ounce of pulverized cayenne, and two pints of diluted alcohol. Macerate fourteen days, and filter through paper.

Tincture of Catechu. — Take an ounce and a half of catechu, an ounce of bruised cinnamon, and one pint of diluted alcohol. Let them stand together two weeks, frequently shaking; then express and filter.

Dose, from thirty drops to a tablespoonful.

Tincture of Cinnamon. — Take an ounce and a half of powdered cinnamon, and one pint of diluted alcohol. Let them stand together for two weeks; express and filter.

Dose, from one to three teaspoonfuls in sweetened water.

Elixir Vitriol. — Take half a pint of alcohol; drop into it seven fluid drams of sulphuric acid, and let the mixture stand three days in a close vessel; then add two drams of powdered ginger, and three drams of powdered cinnamon. Macerate seven days, and filter.

Useful in diarrhœa, dysentery, etc. Dose, from five to fifteen drops. To avoid injury to the teeth, it should be taken through a quill, or glass tube, or else the mouth should be rinsed immediately after swallowing it. Use with care.

Tincture of Lobelia. — Take four ounces of lobelia, and one pint each of distilled vinegar and alcohol. Macerate two weeks, express and filter.

Dose, as a nauseant or expectorant, from thirty to forty drops.

Tincture of Opium. (*Laudanum*). — Take two and a half ounces of opium, and two pints of diluted alcohol. Macerate fourteen days, express, and filter through paper. Dose, from ten to twenty drops.

Tincture of Tolu — Dissolve one ounce of balsam of tolu in one pint of alcohol, and filter.

Tincture of Rhubarb. — Take three ounces of bruised rhubarb, half an ounce of bruised cardamom, and a quart of diluted alcohol. Macerate two weeks, express, and filter through paper.

Tincture of Virginia Snake-Root. — Take three ounces of bruised Virginia snake-root, and one quart of diluted alcohol. Macerate two weeks, express, and filter through paper.

This is advantageously added to the infusion of Peruvian bark, in low states of the system. Dose one to two fluid drams.

Compound Tincture of Aloes. — Take three ounces of powdered aloes, one ounce of saffron, and two pints of tincture of myrrh. Macerate fourteen days, and filter.

This is the well-known *elixir proprietatis*, or more commonly, *elixir pro.* It is considerably used in female disorders, connected with suppressed, retained, or deficient menstruation. Dose, one to two fluid drams.

Compound Tincture of Assafœtida. — Take half an ounce each of lupulin, assafœtida, in small pieces, bruised stramonium seeds, powdered valerian root, and one pint and a half of alcohol; macerate two weeks, shaking frequently, then express and filter.

This is anodyne and antispasmodic, and is used in epilepsy, St. Vitus's dance, and hysterics. Dose, a teaspoonful.

Compound Tincture of Benzoin. — Take three ounces of benzoin, two ounces of purified storax, one ounce of balsam of tolu, half an ounce of powdered aloes, and two pints of alcohol. Macerate two weeks and filter.

This is used in chronic diseases of the air-passages. Dose, from thirty to fifty drops.

Compound Tincture of Cardamom. — Take six drams of bruised cardamom, two ounces of bruised caraway, five drams of bruised cinnamon, five ounces of seeded raisins, one dram of bruised cochineal, and two pints and a half of diluted alcohol. Macerate two weeks, and filter.

This is a very agreeable aromatic; used as a carminative, and to improve other preparations. Dose, one or two fluid drams.

Compound Tincture of Catechu. — Take three ounces of catechu, two ounces of bruised cinnamon, and two pints of diluted alcohol. Macerate fourteen days, express and filter.

This is frequently added to chalk preparations for diarrhœa, etc. Dose, from one to three fluid drams.

Compound Tincture of Cinnamon. — Take one ounce of bruised cinnamon, half an ounce of bruised cardamom seeds, three drams of bruised ginger, and two pints of proof spirits. Macerate fourteen days, express, and filter.

This is a warm, aromatic tincture, useful in spasms and debility of the stomach. Dose, one to two fluid drams.

Compound Tincture of Black Cohosh. — Take one fluid ounce of tincture of black cohosh, half a fluid ounce of tincture of bloodroot, and two fluid drams of tincture of poke-root. Mix.

This is used in diseases of the lungs, liver, and stomach. Dose, from twenty to fifty drops, three or four times a day.

Compound Tincture of Blue Cohosh. — Take one ounce of powdered blue-cohosh root, half an ounce each of bruised water-pepper and ergot, two fluid drams of oil of savin, and twelve fluid ounces of alcohol; mix, macerate for a fortnight, and filter.

A uterine tonic, used for suppressed and painful menstruation, etc. Dose, a teaspoonful, two or three times a day.

Compound Tincture of Colchicum. —Mix one fluid ounce each of tincture of black cohosh and tincture of colchicum-seed.

Used for inflammatory rheumatism and gout. Dose, ten to fifty drops.

Compound Tincture of Gentian. — Take two ounces of bruised gentian, one ounce of orange-peel, half an ounce of bruised cardamom seeds, and two pints of diluted alcohol. Macerate fourteen days, express, and filter.

An elegant bitter, much used in dyspepsia, and as an addition to tonic mixtures for a weakened state of the stomach. Dose, one or two fluid drams.

Compound Tincture of Golden Seal. — Take one ounce each of powdered lobelia-seed and golden seal, and one pint of diluted alcohol. Macerate two weeks, express, and filter.

This is used as a local application to diseased mucous membranes, in leucorrhœa, gleet, etc.

Ammoniated Tincture of Guaiac. — Take four ounces of powdered guaiac, and a pint and a half of aromatic spirits of ammonia. Macerate for two weeks, and filter.

This tincture has considerable reputation in the treatment of chronic rheumatism. Dose, one or two fluid drams.

Compound Tincture of Hemlock (*Golden Tincture*). — Take one ounce each of powdered balsam of tolu, guaiacum, gum hemlock, and gum myrrh, one ounce and a half of oil of hemlock, one ounce of oil of wintergreen, and four pints of alcohol. Mix, let them stand fourteen days, shaking frequently, then filter.

This is used by the Eclectics for rheumatism, wind colic, water-brash, soreness of the chest, etc. Dose, a teaspoonful in a wineglassful of water.

Compound Tincture of High Cranberry. — Take one ounce of high cranberry bark, powdered, half an ounce each of powdered lobelia-seed and bruised skunk-cabbage seed, two drams each of bruised stramonium-seed, powdered bloodroot and capsicum, and two pints of alcohol. Macerate two weeks, express, and filter.

This is an Eclectic remedy, and is useful in nervous and spasmodic complaints, particularly hysterics, etc. Dose, from twenty drops to a teaspoonful.

Compound Tincture of Lavender. — Take three fluid drams of oil of lavender, one dram and a half of oil of anise, one ounce of powdered cloves, three drams of mace, one ounce of raisins, two ounces of red saunders, and one gallon of Jamaica rum. Mix, and macerate fourteen days, then express and filter.

This is often used for flatulence, hysterics, and faintness. Dose, from one to three teaspoonfuls, in water.

Compound Tincture of Lobelia. — Take one ounce each of coarsely powdered lobelia, bloodroot, skunk-cabbage, wild ginger, and pleurisy root. Place them in a vessel, and pour over them one pint of boiling water or vinegar, and cover tightly. When cold, add three pints of alcohol. Macerate two weeks, then express and filter.

A valuable emetic for infants and children, in croup, whooping-cough, bronchitis, and convulsions. Used also as an expectorant, in coughs, pleurisy, etc. Dose, as an emetic for a child, half a teaspoonful and upwards.

Compound Tincture of Lobelia and Capsicum. — Take one ounce each of powdered lobelia, capsicum, and skunk-cabbage, and one pint of diluted alcohol. Mix, macerate fourteen days, and filter.

A prompt antispasmodic in cramps, spasms, lock-jaw, etc. Dose, half a dram to a dram.

Compound Tincture of Myrrh (*Hot Drops*). — Take four ounces of bruised myrrh, two ounces of capsicum, and four pints of alcohol. Mix, macerate a fortnight, and filter.

Applied externally, and occasionally given internally for distress of stomach, flatulence, etc.

Camphorated Tincture of Opium. — Take one dram each of powdered opium and benzoic acid, one fluid dram of oil of anise, two ounces of clarified honey, two scruples of camphor, and two pints of diluted alcohol. Macerate fourteen days, and filter.

This is known to all the world as *paregoric elixir.* It is an agreeable anodyne and antispasmodic, and a good deal used among children to allay cough, and to relieve pains, diarrhœa, etc.

Compound Tincture of Peruvian Bark. — Take two ounces of red bark, powdered, one ounce and a half of bruised orange-peel, three drams of bruised Virginia snake-root, one dram each of saffron, cut, and red saunders, rasped, and twenty fluid ounces of diluted alcohol. Macerate two weeks, express, and filter.

This is *Huxham's tincture.* It is an excellent stomach cordial, and is used with advantage in low forms of fever, etc. Dose, from one to three fluid drams.

Compound Tincture of Rhubarb (*Sweet Tincture of Rhubarb*). — Take two ounces and a half of bruised rhubarb, six drams of bruised liquorice root, three drams each of bruised ginger and saffron, two ounces of refined sugar, and one quart of diluted alcohol. Macerate one week, express, and filter.

A warm, gentle aperient, well fitted for debilitated states of the stomach. Dose, from a dram or two to an ounce.

Tincture of Senna and Jalap (*Elixir Salutis*). — Take three ounces of senna, one ounce of powdered jalap, half an ounce each of bruised coriander and caraway seeds, two drams of bruised cardamom seeds, four ounces of sugar, and three pints of diluted alcohol. Macerate two weeks, express, and filter.

This is a warm cordial purgative, useful in costiveness, and gout attended with debility. Dose, two fluid drams to an ounce.

Compound Tincture of Tamarac (*Bone's Bitters*). — Take three ounces each of tamarac-bark and juniper-berries, two ounces of prickly-ash bark, one ounce and a half each of wild-cherry bark and seneca snake-root, and half an ounce of tansy; powder coarsely, and mix; then add one pint and a half of whiskey, and let them stand twenty-four hours; then place the whole in a vapor displacement apparatus, and force through the mixture the vapor of another pint of whiskey, after which steam from water enough to make the tincture equal to six quarts. To this add twelve ounces of molasses, and six ounces of thoroughly dissolved alcoholic extract of mandrake.

This is tonic, diuretic, and aperient. Useful in dyspepsia, etc. Dose, a tablespoonful three times a day.

Ammoniated Tincture of Valerian. — Take four ounces of bruised valerian, and one quart of aromatic spirit of ammonia. Macerate two weeks, express, and filter.

This is used as an antispasmodic in hysterics and other nervous diseases. Dose, one or two fluid drams, in sweetened water.

Compound Tincture of Virginia Snake-root (*Sudorific Tincture*). — Take eight scruples each, in coarse powder, of Virginia snake-root, ipecacuanha, saffron, opium, and camphor, and one pint of Holland gin or proof spirit. Mix, macerate two weeks, express, and filter.

This tincture tends powerfully to induce perspiration, and is used for such purpose when it is desirable to procure sleep, etc. Dose, from ten drops to a teaspoonful, every hour or two, in catnip or balm tea.

Vinegars.

Vinegar of Lobelia. — Take two ounces of powdered lobelia-seed, and one pint of distilled vinegar. Macerate in a close vessel one week; then express and filter, and add one fluid ounce of alcohol. This is useful as an emetic and expectorant; externally, it is valuable in skin diseases. Dose, one to four teaspoonfuls, as often as necessary.

Vinegar of Squill.—Take two ounces of sliced squill, and one pint of distilled vinegar; macerate in a close glass vessel one week; then express, strain, and add one fluid ounce of alcohol.

This is expectorant and diuretic, and is sometimes used for coughs and diseases of the chest.

Lemons.

One of the leading physicians of New York says Lemons are one of the greatest blessings God has bestowed upon mankind.

Most of the lemons used in the civilized world come from the Island of Sicily.

They are very healthful and good, not only for allaying thirst, but will cure a multitude of disorders.

The juice of a lemon contains citric acid, and as a result decreases the acid secretions of the body and increases the alkaline. Citric acid, which is the acid of the lemon, not only decreases the secretion of gastric acid but increases very materially the secretion of saliva. The very thought of a lemon is sufficient to make the mouth water.

Debility.

If you feel "so tired" your bones ache, and you have a bad taste in your mouth, squeeze lemon juice into fresh water enough to make a sour beverage and drink freely of it many times a day, for it is surely a foe to sour stomach and bile—it will pass it off through the natural channels and leave the stomach, liver and kidneys in a fresh and more healthful condition.

Headache.

If you have a throbbing headache, drink the juice of half a lemon in fresh water, repeat the other half in thirty minutes; take a slice of lemon and rub the bits over the brow and temples and the pain will soon go away.

Heartburn.

Lemon juice taken before meals will be found very advantageous as a preventive and cure for heartburn.

Fevers.

When the mouth is parched and dry, lemon juice added to a little warm water and given in small doses will increase saliva and refresh the patient. This should not be given if the bowels are disordered.

Dyspepsia.

Juice of half a lemon should be taken in a little warm water before each meal; avoid sweets. Repeat for several days and a marked improvement will surely follow.

Rheumatism or Gout.

The juice of a lemon should be taken in a little warm water at night just before retiring. This has proved a very beneficial relief to the most obstinate cases.

Colds and Coughs.

Take the juice of two lemons, add ten drops of camphor and a tablespoonful of granulated sugar. Mix well and take a teaspoonful every half hour until relief is obtained.

For the Hair.

If your hair is falling out, rub slices of lemon thoroughly into the roots and over the scalp, washing the head afterwards with warm, soft water. This is a sure cure for dandruff and preserves and strengthens the roots of the hair.

For the Complexion, Face or Freckles.

Squeeze lemon juice into milk, rub the mixture over the face and neck. Leave on over night and you will rejoice in the fresh glow of your complexion. This will also remove tan and freckles.

For the Hands.

Mix lemon juice and glycerine, rub your hands with it at night, and if you are not too nervous, wear large old gloves and you will wonder at their dazzling whiteness.

For Mosquito or Insect Bites.

Touch the hurt spot with pure lemon juice and you will soon find relief and cure.

Removing Corns or Warts.

Bind on a slice of lemon with bandage successively for a few days and the corn or wart can be easily removed.

Poisoning from Opium or Other Narcotics.

Give an emetic to cause vomiting, say one-half teaspoonful of mustard in one-half pint of water, then give the juice of a whole lemon in pure water, which will counteract the effects.

Seasickness.

For one week before going aboard ship take the juice of a lemon in pure water just before eating breakfast. This has been tried and proved as a sure preventive by many travelers.

La Grippe.

Take as hot a bath as you can bear, soak the feet for twenty minutes in hot mustard water, immediately going to bed; covering yourself up well, drink the juice of a lemon in hot water, this will cause perspiration and relief. Be careful going out of doors next day and avoid drafts and cold.

BLACKBERRY.

Sure cure for diarrhœa and dysentery. Be sure and use this valuable remedy. No doctor is needed when this is taken faithfully. (See index under Blackberry.)

CELERY.

For nervous complaints make a tea by boiling celery stocks and leaves until very soft; drink several times a day. The above also gives immediate relief from rheumatism.

CAYENNE PEPPER.

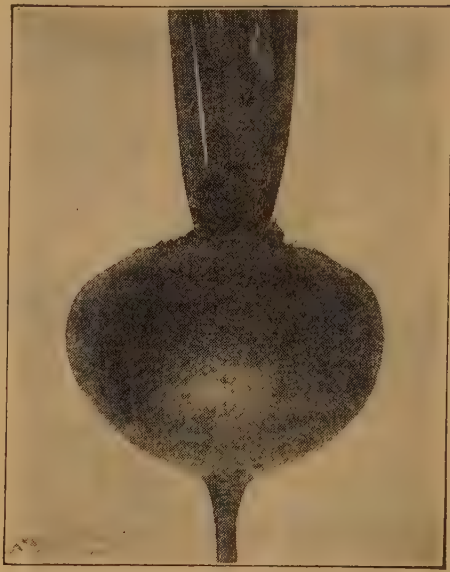
Well known and most useful remedy for Scarlet Fever. (See index Cayenne Pepper.)

DANDELION.

Sure cure for Dyspepsia, Liver Complaint, etc. (See index under Dandelion.)

HYDRANGEA.

Infallible in dissolving and removing Gall and Bladder Stones. (See index under Hydrangea.)



GARDEN BEET.

For Suppressed or Delayed Menstruation. It is claimed it seldom fails. See Index, Beets.

PUMPKIN.

Most valuable for expelling the Tape Worm. Will expel the head of the worm, which is absolutely necessary to insure permanent relief. (See index under Pumpkin.)

TOMATO.

The Tomato is a valuable remedy for Cholera Infantum. Prepare by taking several ripe tomatoes, peel and add sugar to the taste, strain and give a teaspoonful every half hour until cured.

SKULLCAP.

Sure cure for Neuralgia and Sciatica. This remedy is easily prepared in the home. (See index under Skullcap.)

STAR GRASS.

Sure cure for suppressed or painful menstruation and womb complaint. (See index under Star Grass.)

TULIP.

(Poplar or White Poplar.)

Sure cure for Fever and Ague. This remedy is used with great success in curing long standing cases of this disease. (See index under Tulip Tree.)

WHITE POND LILY.

Sure cure for Leucorrhea. (See index under White Pond Lily.)

PRESCRIPTIONS. – RECIPES.

THESE prescriptions are numbered, and referred to by corresponding numbers in the treatment of the various diseases. This arrangement saves the trouble of writing out each prescription every time it is wanted under the several disorders. When there are several recipes, each of which is suitable in a certain stage of a complaint, this plan affords the means of referring to them all in a little space, by simply giving their numbers. The doses named are always for *grown persons*, unless it is otherwise stated. For young people, from 15 to 21, give ⅔ of dose. For children, from 7 to 15, ½ of dose. In administering medicines of all kinds, the strength and condition of the patient should be taken into consideration.

Great pains have been taken in preparing these prescriptions. A considerable portion of them are the favorite recipes of our most distinguished physicians who have compiled this valuable book. They are compounded from the latest discoveries in medicine.

Emetics.

1. Ipecac powder, in 30-grain doses, taken in lukewarm water and repeated every 20 minutes if needed. Wine or syrup of ipecac is a more useful and palatable emetic for infants and children: it may be given in 1 to 2 teaspoonfuls as a dose. Useful in poisoning, overloaded stomach, croup, etc.

2. Mustard flour is a very prompt emetic and always on hand for an emergency. Dose, 1 dessertspoonful in ½ pint of warm water; repeated in 10 minutes if needed.

3. Sulphate zinc is a very prompt emetic producing little irritation; 30 grains, with thirty of Ipecac, generally suffice, but the dose may be repeated.

4. Apomorphia, when injected under the skin in doses of ⅙ grain, produces vomiting in 3 to 10 minutes. It may also be given by the mouth in doses of ⅓ of a grain.

Purges. Cathartics.

5. Precipitated sulphur, 15 grains; magnesia, 1 scruple. Mix. To be taken each night at bedtime, for costiveness and bleeding piles.

6. Confection of senna, 2 ozs.; cream of tartar, 1 oz.; sulphur, 1 oz.; syrup of ginger enough to make a stiff paste. Mix. A piece as large as a nutmeg is to be taken as often as necessary to keep the bowels open. One of the very best remedies for piles.

7. Rochelle salts, 2 drams; bicarbonate of soda, 2 scruples; water, ½ pint. Mix. To this mixture add 35 grains of tartaric acid, and take the whole foaming. This is the recipe for Seidlitz powders.

8. Calcined magnesia, 1 dram; water, 2 ozs. Mix. To be taken at a draught. Husband's magnesia, in powder form, taken in teaspoonful doses every 2 hours till bowels move, is a excellent mild saline.

9. Sulphate of magnesia (epsom salts), 2 drams; freshly roasted coffee in coarse powder, 40 grains; hot water, 4 ozs. Mix and boil for three minutes, and strain. This may be sweetened, and taken every morning for habitual costiveness, or repeated once in three hours, if an immediate effect is desired. To be taken at a draught.

10. Castor-oil, 1 oz.; the yolk of one egg; put together, and add simple syrup, ½ oz.; peppermint water, 2 ozs. Mix. To be taken at a draught, after being well stirred or shaken. Equally palatable is a tablespoonful or two of castor-oil between 2 layers of lemon juice.

11. Sulphur, 1 dram; cream of tartar, 2 drams. Mix. To be taken in syrup or molasses.

12. Rhubarb, 10 grains; calcined magnesia, ½ dram. Mix. To be taken in syrup or molasses.

13. Powdered senna, ½ dram; powdered jalap, 10 grains; powdered cloves, 10 grains. Mix. To be taken in sweetened water at a draught.

14. Compound licorice powder, or so-called German powder, is a thorough physic in heaping teaspoonful doses. It is a physic very commonly used. Best taken in milk, but not bad in water.

15. Garfield tea, bought in packages and steeped per directions, is also a simple carthartic, and may be continued for a while each night. No physic proper should be so used for any great length of time.

16. Castor-oil, 1 dessert spoonful to 2 tablespoonfuls.

17. Castoria is a proprietary medicine, yet one which children and infants take readily and without any deleterious effect.

18. Sulphate of magnesia, 1 oz.; cream of tartar, 1 oz.; pure water, 1 pint. Mix. A wine-glassful occasionally.

19. Compound extract of colocynth, ½ dram; aloin, 2 grains; extract of belladonna, 2 grains. Mix, and divide into 8 pills. One as required.

20. The solution of citrate of magnesia, which all druggists keep in stock in pint bottles, is the most palatable, the simplest, and most efficacious saline we have. The ordinary dose is ½ bottle; this may be repeated in 4 hours.

21. Syrup of figs is another proprietary medicine of some value; it contains senna. Dose, 2 to 4 teaspoonfuls. Is agreeable to children.

22. Aloin, strychnia and belladonna, in pill form, is sold everywhere by druggists, and is a suitable mild cathartic. The pill is put up in varying strengths, but that which contains aloin, ⅕ grain, is a moderate strength pill.

23. Sulphur, 1 teaspoonful; cream of tartar, 10 grains; saltpetre, 5 grains. Mix. To be taken at a dose.

24. Manna, 2 drams; fennel water, 1 oz. Mix. One dessert spoonful, as a cathartic for an infant.

25. Castoria (See No. 17) and aromatic syrup of rhubarb are good laxatives for children.

26. Cascara sagrada is an herb which has become extremely popular and useful in constipation, as it is a tonic laxative. It is given in various forms, of which the best are the aromatic preparations of cascara, in teaspoonful doses at night, the solid extract in pill form, in doses of ⅓ to ½ grain, 1 to 3 three times daily, or Maltine with cascara, in 1 to 4 teaspoonful doses at bedtime. These preparations may be continued for long intervals if need be.

27. Epsom salts, 2 drams; dissolve in pure water, 1 oz. Then add sweet spirits of nitre, 2 drams; laudanum, 10 drops. Dose, a teaspoonful, to be repeated according to circumstances.

28. Aromatic syrup of rhubarb, in teaspoonful doses to a young child, or in tablespoonful doses to an older child, is a good corrective.

29. Compound extract of colocynth, ½ dram; extract of jalap, 15 grains. Mix. Make 12 pills. Two or three pills will produce active operation of the bowels. Add ext. belladonna, 2 grs., to prevent gripes.

30. Solution of the citrate of magnesia, in wineglass doses, every two hours, till it operates, or in ½ bottle dose for a single dose.

31. Pulverized gamboge, 12 grs.; pulv. scammony, 12 grs.; elaterium, 2 grs.; croton oil, 8 drops; ext. of stramonium, 3 grs. Mix. Make 12 pills. One pill is a dose, repeated every hour until it operates.

32. Compound cathartic pills, improved, in doses of two to three pills, produce in four hours one or two complete and full operations.

33. See Nos. 17, 20, 21, and 25.

34. Leptandrin, gr. 12; podophyllin, gr. 2; euonymin, gr. 12; inspissated ox-gall, gr. 48. Divide into 24 pills. Take one pill one to three times a day.

35. Pulverized rhubarb, 40 grains; bicarbonate of potash, 20 grains; ext. of nux vomica, 5 grs. Mix. Make 20 pills. One pill twice a day.

36. Leptandrin, grs. 12; ext. nux vomica, grs. 6; euonymin, grs. 12; iridin, grs. 12; ext. cascara sagrada, grs. 8. Divide into 24 pills. Take one pill three times daily if needed.

37. Sweet tinct. of rhubarb, 4 ozs.; bicarbonate of soda, 2 drams. Mix. From a teaspoonful to a tablespoonful, as occasion may require.

38. Pulverized rhubarb, 2 ozs.; bicarbonate of potash, 1 oz. Mix. Of this take enough to produce one movement of the bowels per day.

39. Leptandrin, 30 grs.; podophyllin, 5 grs.; pulv. cayenne, 10 grs.; ext. nux vomica, 6 grs.; quinine, 12 grs. Mix. Make 24 pills. One, two or three times a day.

40. Podophyllin, 2 grs.; leptandrin, 10 grains; cream of tartar, 1 teaspoonful. Mix. Divide into 10 powders. One is a dose.

41. Comp. powder of jalap, 1 oz.; cream of tartar, 1 oz. Mix. One teaspoonful is a dose, to be taken in sweetened water.

42. Pulverized charcoal, 1½ drams; pulv. rhubarb, 40 grains; pulv. ipecac, 6 grains; extract of hyoscyamus, 12 grs. Mix. Divide into 12 portions. Give one every three or four hours.

43. Pulverized blood-root, 1 dram; pulv. rhubarb, 1 dram; castile soap, 40 grains. Mix, and divide into 32 pills. Take one morning and night. Excellent for costiveness.

44. Rochelle, 14 drams; magnesia, 11 drams; powdered charcoal, 8 drams. Mix. Dose, a heaping teaspoonful, in dyspepsia and costiveness, with foul breath, etc.

45. Pulverized rhubarb, 8 grs.; pulv. guaiacum, 8 grs.; galbanum, 2 grs.; pulv. ipecac, 2 grs. Mix. Make 8 pills. Take one or two pills night and morning. For a weak stomach and a bilious condition.

Tonic and Cathartic.

46. Podophyllin, 4 grs.; leptandrin, 8 grs.; quinine, 8 grs.; ext. nux vomica, 2 grs. Mix. Make 16 pills. One, two, or three pills at bedtime, according to the requirements of the case.

47. Sulphate of iron, 20 grains; ext. cascara, 7 grains. Mix and make into 20 pills. One pill twice a day. An excellent remedy in chlorosis, when the bowels are confined.

48. Carbonate of iron, 1 dram; pulverized rhubarb, ½ dram; aloin, 6 grains; extract of hops, ½ dram. Mix. Make 30 pills. One pill three times a day.

49. Fluid extract of senna, 1 dram; compound fluid extract of gentian, ½ dram; fluid extract of ginger, ½ dram; aromatic spirits of ammonia, ½ dram. Mix. To be taken in a wineglassful of sweetened water.

50. Aromatic syrup of rhubarb, 1 oz.; tincture of colombo, 1 oz. Mix. Dose, two teaspoonfuls three times a day.

51. Compound infusion of gentian, 6 ozs.; epsom salts, 4 drams; diluted sulphuric acid, 16 drops. Mix. A tablespoonful every six hours.

52. Tr. aloes, ½ oz.; pulv. gum-arabic, 5 grs.; magnesia, 1 dram; white sugar, 5 grs.; comp. infusion of gentian, 1½ ozs.; water, 1½ ozs.; tinct. of ginger, 1½ ozs. Mix. From a teaspoonful to a tablespoonful to be taken night and morning.

53. Pulverized Peruvian bark, 1 oz.; pulv. rhubarb, ½ dram; pulv. muriate of ammonia, 1 dram. Mix. Divide into eight powders. Take one three times a day.

54. Oxide of zinc, 2 drams; magnesia, ½ oz.; quinine, 20 grains. Mix. Divide into 32 powders. Take one four times a day.

55. Sprudel salts, 1 teaspoonful in ½ glass warm water on arising; crab-orchard water, 1 tablespoonful in ½ glass water on arising; Hunyadi Janos, ⅓ glass or more in water; 1 teaspoonful phosphate of sodium in a glass of hot water on arising; are all good saline remedies for biliousness.

Carminatives.

56. Manna, 1 oz.; aniseed, bruised, 1 dram; boiling water, ½ pint. Mix. Let the mixture stand for half an hour, then strain, and add three drams of carbonate of magnesia, so as to make a perfect mixture. Take a wineglass full every two or three hours till it operates. For the drum-head state of the bowels.

57. Thoroughwort, 2 ozs.; ginger and cloves, each, ½ oz.; ext. dandelion, 4 ozs.; water, 1½ pints. Boil to one-third, and add sugar, 1½ pounds, and brandy, ½ pint. An excellent cordial cathartic to act upon the liver. Dose, one tablespoonful.

Tonics.

58. Chamomile flowers, ½ oz.; cold water, 1 pint. Macerate for one hour and strain. A wineglassful to be taken several times a day.

59. Sulphate of quinine, 15 grains; diluted sulphuric acid, 15 drops; compound tincture of cardamom, 3 drams; tincture of hops, 3 drams; compound infusion of roses, 6 ozs. Mix. A teaspoonful two or three times a day, in chlorosis.

60. Diluted sulphuric acid, 2 drams; syrup of orange-peel, 2 ozs.; cinnamon-water, 1 oz. Mix. A teaspoonful or two in a wineglass of water two or three times a day.

61. Blaud's iron pill, 3 grains, three times daily. This pill is often united with strychnia, $\frac{1}{30}$ grain, and arsenious acid, $\frac{1}{30}$ grain, which adds to its efficiency. If constipation exists, there may also be added ext. cascara, ⅓ grain, in chlorosis, anaemia, and conditions requiring iron.

62. Sulphate of quinine, 12 grains; aromatic sulphuric acid, 24 drops; syrup, 1 oz.; peppermint water, 1 oz. Mix. In intermittent fever, take one tablespoonful once in three hours. Ordinarily, one teaspoonful is a sufficient dose. Or quinine, 10 grains, four hours before the expected chill.

63. Compound infusion of gentian, 8 ozs.; nitro-muriatic acid, 30 drops. Mix. Take one tablespoonful three times a day.

64. Bicarbonate of soda, ½ oz.; compound infusion of gentian, 4 ozs.; tincture of colombo, 1 oz.; syrup of orange-peel, ½ oz. Mix. Take a tablespoonful three times a day.

65. Sulphate of quinine, 1 scruple; alcohol, 4 ozs.; sulphuric acid, 5 drops; Madeira wine, 1 quart. Mix. Two wineglassfuls a day.

66. Tinct. gentian compound, teaspoonful in wineglass water before eating.

67. Quinine, 20 grains; alcohol, 4 ozs.; sulphuric acid, 5 drops. Mix. Take a teaspoonful three times a day, or quinine pills, 2 grs. each, one three times a day.

68. Arseniate of iron, 3 grains; extract of gentian, 2 drams; pulverized licorice, 1 dram. Mix. Make 20 pills. Take one pill three times a day. If the eyelids become inflamed, discontinue for a few days, and then begin again.

69. Soft water, 3 ozs.; quinine, 10 grains; diluted sulphuric acid, 10 drops; simple syrup, 1 oz. Mix. A teaspoonful every two or three hours.

70. Quinine, 10 grains; diluted sulphuric acid, 10 drops; white sugar, 4 drams; cinnamon water, 4 ozs.; tincture of kino, 2 drams. Mix. One teaspoonful every three hours.

71. Tartrate of iron, 40 grains; soft water, 2 ozs.; syrup of ginger, ½ oz. Mix. 20 to 40 drops every three hours.

72. Potassio-tartrate iron, 80 grains; quinine, 4 scruples; alcoholic ext. of black cohosh, 80 grains. Mix. Make 48 pills. One pill three times a day.

73. Pill, citrate of iron, quinine, and strychnia, 2 grains. One pill three times daily.

74. Precipitated carbonate of iron, 30 drams; ext. of conium, 15 drams; syrup of balsam of tolu, 6 ozs.; oil of cinnamon, 12 drops; oil of lemon, 12 drops; alcohol, 2 ozs.; water, 1 pint; brandy, ½ pint; loaf-sugar, 4 ozs. Mix. Give from one to three tablespoonfuls three or four times a day, in insanity.

75. Citrate of iron, 1 dram; sulphate of quinine, 20 grains; ext. of nux vomica, 8 grs. Mix. Make 32 pills. One pill three times a day.

76. Nitric acid, 1 dram; hydrochloric acid, ½ dram; comp. infusion of gentian, 1½ ozs. Mix. One teaspoonful in water is a dose.

77. Sulph. quinine, 1 dram; tartaric acid, 6 grs.; water, 1 drop. Mix. Make 30 pills. Dose, one pill, to be repeated as often as needed.

78. Diluted nitric acid, 4 drams; diluted muriatic acid, 4 drams; syrup of orange-peel, 1 dram; water, 1½ ozs. Mix. One teaspoonful in a wineglass of water, taken before meals.

General and Nerve Tonics.

79. Valerianate of iron, quinine and zinc, of each 1 grain in pill form, taken three times daily, is an excellent nervine; or pill sumbul comp., one three times daily.

80. Iron by hydrogren, 48 grs.; arsenious acid, 1 gr.; ext. of nux vomica, 5 grs. Mix. Make 24 pills. For an adult, one pill three times a day.

81. Valerinate quinine, 1 grain; extract valerian, 1 grain; extract of hyoscyamus, ½ grain. One pill every two or three hours till quiet, then one every four or six hours.

82. Zinc sulphate, 1 dram; ext. of nux vomica, 8 grs. Mix. Make 32 pills. One pill three times a day.

83. Strychnia, 2 grs.; ext. of aconite, 16 grs.; ext. of hyoscyamus, 16 grs.; quinine, ½ dram. Mix. Make 45 pills. One pill three times a day.

84. Citrate of iron, 1 dram; trisnitrate of bismuth, 1 dram; sulphate of quinia, 20 grains; ext. of nux vomica, 6 grs. Mix. Make 32 pills. Take one pill three times a day.

Nerve-Tonics and Antispasmodics.

85. Strychnine, 2 grs.; ext. belladonna, 5 grs.; alcoholic extract of black cohosh, 2 scruples. Mix. Make 40 pills. One pill four times a day.

86. Strychnine, 2 grs.; diluted phosphoric acid, 1 oz.; peppermint water, 3 pints. Dissolve the strychnine in the acid; then add the peppermint water. A tablespoonful to be taken three times a day, in palsy, dyspepsia, neuralgia, and in most states of the nervous system requiring tone. Also in fever and ague.

87. High-cranberry bark, 1 oz.; skunk-cabbage root, ½ oz.; scullcap, ½ oz.; cardamom seeds, 2 drams; pulv. cayenne, 2 drams. Put these to a pint of wine; shake well every day for three or four days. A tablespoonful four times a day.

88. Aconitia, $\frac{1}{400}$ grain; antifebrin, 2 grains; quinine, 1 grain; arsenic chlorophos., $\frac{1}{100}$ grain; strychnia, $\frac{1}{120}$ grain. One pill. Take one such pill every two to four hours, according to pain. Used in neuralgia.

89. Extract of valerian, 12 grs.; extract of hyoscyamus, 12 grs.; oxide of zinc, 24 grs. Mix. Make 12 pills. One pill twice a day.

90. Extract of hyoscyamus, 48 grs.; extract of valerian, 24 grs.; camphor, 24 grs. Divide into 24 pills. Take one every four hours.

91. Extract of hyoscyamus, ½ dram; aconitia, ⅕ gr.; strychnine, 2 grs.; pulverized cayenne, ½ dram; phosphide of zinc, 5 grs. Make 30 pills. Take one four times a day. Excellent in neuralgia.

92. Antikamnia, 60 grs.; caffein, 24 grs.; divide into 12 capsules. Take one every two hours for neuralgia of face. See also 88.

93. Valerianate of iron, valerianate of zinc, valerianate of quinine; of each, 30 grs., to be divided into 30 pills or capsules. Take one three times a day for the neuralgic condition.

94. Tincture of veratrum viride, 2 drams; bromide of soda, 4 drams; elixir of anise, 1 oz.; syrup of orange, 2 ozs. Take a teaspoonful in wineglass of water every two to four hours according to nervousness.

95. Strychnine, 1 gr.; arsenious acid, 1 gr.; quinine, 20 grs.; reduced iron, 20 grs.; extract cannabis indica, 5 grs. Divide into 30 pills or capsules. Take one three times daily.

96. Simple syrup, 1 oz.; prussic acid, 1 drop. Mix. A teaspoonful morning and evening. If no dizziness or sickness is produced within forty-eight hours, repeat the dose three times a day. This is for a child six months old; add one drop more of the acid for each additional year of the child's age.

97. Phosphide of zinc, 5 grs.; extract of nux vomica, 7 grs.; extract of cannabis indica, 5 grs. Divide into 30 pills or capsules, and take one three times daily as a nerve tonic.

98. Quinine, 12 grs.; reduced iron, 10 grs.; arsenious acid, ½ gr.; phosphide of zinc, 2 grs. Divide into 24 pills. Take one three times daily for a child from 8 to 12 years of age. For St. Vitus's dance. Or, Fowler's solution, 1 oz. Give 3 drops to a child of 8 to 12 years in a little water three times daily, and increase dose by one drop every third day till eyes become puffy or nose waters. Then stop for three days and begin again. Give also pepto-mangan, 1 bottle; a teaspoonful three times daily. This latter is an elegant form of mild iron, and does not stain the teeth or constipate.

99. Phenacetin, 50 grs.; divide into 6 powders; give one every two hours till pain ceases. Or chlorodyne, one dram; aromatic spirits of ammonia, one dram; elixir simplex, 1 oz. Mix. One teaspoonful in a tablespoonful of hot water every 20 minutes till relieved.

100. Extract of high cranberry bark, 20 grains; euonymin, 10 grains; iridin, 10 grains; pulverized cayenne, 20 grains. Mix. Make 20 pills. Take one pill an hour after each meal. Simpler yet is a tablespoonful of crab-orchard water in ½ glass plain water once or twice a day.

101. Iodide of potash, peppermint water; of each 2 ozs. Give 10 to 30 drops in ½ glass water three times daily on a full stomach; for secondary and tertiary syphilis and similar complaints. For a child give 5 to 10 drops.

102. Elixir of the three iodides, 6 ozs.; one teaspoonful in water three times daily.

103. Syrup of iodide of iron, 1 oz. Thirty drops three times a day, in water. An excellent remedy in chlorosis, and all other low states of the blood connected with scrofula. Or, a pill of iodide of iron, 1 gr., three times daily.

Expectorants and Cough Preparations.

104. Apomorphia, 1 gr.; chloroform, 10 drops; elixir yerba santa, 2 ozs. Take one teaspoonful every two hours.

105. Infusion of senega, 4 ozs.; syrup of ipecac, 1 dram; syrup of squills, 3 drams; tartar emetic, 1½ grs. Mix. A teaspoonful every ten minutes.

106. Wine of ipecac, 1½ drams; chloroform, 5 drops; syrup of tolu sufficient to make 1 oz. Give ½ teaspoonful every two hours for a child three years old.

107. Tincture aconite, 20 drops; wine of antimony, 1½ drams; chloroform, 10 drops; elixir terpin hydrate, enough to make 2 ozs. Give teaspoonful every two hours.

108. Bromoform, 1 oz. Give 5 drops in tablespoonful of water four times daily to a child eight years old suffering with whooping cough. This dose is to be well mixed and quickly given, because bromoform does not mix well with water. It is to be increased by 1 drop every other day till about 10 drops are given at a dose. Other ages in proportion. Burn also a cresolene lamp.

109. Tincture bloodroot, 4½ ozs.; wine of ipecac, 2 drams; tincture of aconite 20 drops; honey, ½ oz.; McMunn's elixir, 1½ drams; elixir yerba santa to make 3 ozs. Take teaspoonful every two hours.

110. Wine of ipecac, 2 drams; chloroform, 15 drops; liquid Dover's, 1 dram; linoline, or compound emulsion of flax-seed (omitting the chloral and morphine) enough to make 3 ozs. One teaspoonful every two hours: for hard, dry cough.

111. Tincture of lobelia, 2 drams; tincture of bloodroot, 4 drams; honey, 1 oz.; dilute hydrocyanic acid, 1½ drams; cherry-laurel water enough to make 3 ozs. Give one teaspoonful every two hours.

112. Syrup of tolu, 1 oz.; syrup of squills, ½ oz.; wine of ipecac, 2 drams; codeia, 2 grs.; mucilage of gum-arabic, 1½ ozs. Mix. Take a teaspoonful occasionally.

113. Tincture bloodroot, 2 drams; syrup of tolu, 1 oz.; mucilage of gum-arabic, 3 ozs.; diluted hydrocyanic acid, 40 drops; codeia, 4 grs. Mix. Dose, from one to two teaspoonfuls.

Carminatives.

114. Aromatic spirits of ammonia, 2 drams; tincture of cardamom compound, 1 oz.; tincture of capsicum, 10 drops; chloroform, 15 drops; spirits of lavender compound enough to make 2 ozs. Give teaspoonful in wineglass of hot water every fifteen minutes till relieved.

115. Compound tincture of cardamom, 2 ozs.; compound tincture of lavender 2 ozs; Hayden's Viburnum Compound, 2 ozs. Mix. One teaspoonful at a time, as occasion may require.

Narcotics and Anodynes.

116. Hayden's viburnum compound, or dioviburnum. One teaspoonful every ½ hour while in pain. Two tablespoonfuls of gin, and even of brandy in hot water also relieve at times.

117. Powdered camphor, 12 grs.; powdered Castile soap, 12 grs. codeia, 4 grs.; syrup, 2 scrs. Mix. Make into 12 pills. Take one every hour till the effects of opium are experienced.

118. Laudanum, ½ oz.; wine of ipecac, ½ oz.; spirits of nitric ether, ½ oz. Mix. One teaspoonful every hour, till narcotic effects are observed.

119. Camphor, 2 drams; chloroform, 1 dram; the yoke of an egg. Mix, and rub together; and then add, McMunn's elixir, 3 drams; aromatic spirits of ammonia, 1 oz. Mix well. Take one teaspoonful every hour until it proves anodyne.

120. Camphor, ½ dram; extract of hyoscyamus, 20 grs.; mucilage of gum-arabic, 40 grains. Make 10 pills. One pill at bedtime.

121. Chloroform, 2 ozs.; compound sulphuric ether, 2 ozs.; cardamom, 2 ozs.; tincture cayenne, 1½ ozs.; hydrocyanic acid, diluted, ½ oz. Mix. Dose, half a teaspoonful every three hours till anodyne effects are experienced.

122. Extract of belladonna, 10 grs.; hydrocyanic acid, 40 drops; tincture colombo, 1 oz.; simple syrup, 1 oz.; soft water, 2 ozs. Mix. One teaspoonful three or four times a day. Excellent in gastralgia and irritable dyspepsia. Also in asthma.

123. Extract of belladonna, 6 grs.; pulverized ipecac, 10 grs.; confection of roses, 2 grs. Mix. Make 30 pills. Take 1 pill twice a day.

Diaphoretics and Sedatives.

124. Tincture of American hellebore, 1 dram; tincture of black cohosh, 2 ozs. Mix. Take one teaspoonful from three to six times a day. Excellent for neuralgia.

125. Pulverized gum arabic, 20 grains; soft water, 2 ozs.; sweet spirits of nitre, ½ oz.; tincture of veratrum viride, 20 drops. Mix. Give half a teaspoonful every half hour.

126. Phenacetine, 10 grs. taken on tongue with a glass of hot lemonade; children in proportion to age.

127. Dover's powder, 10 grs. on retiring, taken with hot drink.

Diuretics.

128. Spirits of Mindererus, 2 ozs.; sweet spirits of nitre, 1 oz. Teaspoonful every three hours. 10 to 30 drops, diluted, for children.

129. Diuretin, 10 grs. every two hours.

130. Infusion of digitalis, 4 ozs.; acetate of potash, 2 drams; sweet spirits of nitre, 2 drams; cinnamon water, 1½ ozs. Mix. A tablespoonful every four or five hours.

131. Acetate of potash, 4 drams; lemon juice, 1 oz.; syrup and water of each, 1 oz. Teaspoonful in wineglass of water every two hours.

Refrigerants.

132. Cream of tartar, 40 grains; water, 1 quart. Mix. Flavor to suit. A wineglassful at a time.

133. Bicarbonate of soda, 30 grs.; water, 6 ozs. Mix. To this mixture add 25 grs. of tartaric acid, and take the whole foaming.

Stimulants.

134. Muriate of ammonia, 1 oz.; soft water, 9 ozs. Mix. Take one tablespoonful three or four times a day.

135. Aromatic spirits of ammonia, 2 drams; ether, 1 dram; chlorodyne, 20 drops; spirits of camphor, 1 dram. Mix. Half a teaspoonful as often as required.

Alteratives.

136. Proto-iodide of mercury, 5 grs.; extract of opium, 5 grs. Mix. Make 20 pills. Take one pill night and morning. For syphilis.

137. Biniodide of mercury, 5 grs.; extract of conium, 40 grains. Mix. Make 20 pills. Take one pill night and morning. For syphilis.

138. Compound infusion of sarsaparilla, 1 pint; iodide of potassium, ½ oz. Mix. Take a teaspoonful after each meal.

139. Compound infusion of sarsaparilla, 1 pint; corrosive sublimate, 4 grs. Mix. Take a teaspoonful four times a day. For syphilis.

140. Compound infusion of gentian, 4 ozs.; iodide of potassium, ½ oz. Mix. One teaspoonful after each meal, well diluted.

141. Iodide of arsenic, 5 grs.; soft water, 1 pint. Mix. One teaspoonful three times a day.

142. Blue pill, 12 grs.; pulverized ipecac, 3 grs.; extract of hyoscyamus, 4 grs. Mix. Divide into 12 parts, one to be given every three hours. For syphilis.

143. Pulverized bloodroot, 20 grains; iodide of arsenic, 2 grs.; extract of cicuta, 40 grains. Mix. Make 40 pills. One pill three times a day.

144. Iodide of potassium, 1 dram; water, ½ oz. Mix. Thirty drops to a child 7 years old, every hour.

145. Compound syrup of stillingia, 1 pint; iodide of potassium, 1 oz. Mix. A tablespoonful after each meal.

146. Fluid extract of sarsaparilla, 4 ozs.; fluid extract of pipsissewa, 1 oz.; water, 1 quart; iodide of potassium, 2 ozs. Mix. Take a tablespoonful three times a day.

147. Bicarbonate of potassa, 3 drams; water, 4 ozs. Mix. Add a tablespoonful of the solution to the same quantity of lemon juice, previously mixed with a tablespoonful of water. To be taken foaming, several times a day.

148. Blue pill, ½ dram; extract of henbane, 20 grains. Make 10 pills. One pill at night. For syphilis.

149. Mercury with chalk, ½ dram; extract of conium, 20 grains. Make into 8 pills. Take one pill night and morning. For syphilis.

150. Corrosive sublimate, 4 grs.; extract of opium, 5 grs. Mix, and make into 20 pills. Take one pill night and morning, For syphilis.

151. Iodide of potassium, 1 dram; syrup of sarsaparilla, 4 ozs. Mix. Take two teaspoonfuls three times a day. For syphilis.

Astringents.

152. Sugar of lead, 40 grains; ergotine, 20 grains; conserve of red roses, 20 grains. Beat into a mass, which is to be divided into 30 pills. Take one every hour, until beneficial effects are observed.

153. Tully's powder, ½ dram; prepared chalk, 20 grains. Mix, and divide into 12 equal powders.

154. Chalk mixture, 4 ozs.; tincture of catechu, ½ oz.; papine, 3 drams. Mix. Dose, in diarrhœa, two to four teaspoonfuls three times a day.

155. Oil of turpentine, 1 dram; mucilage of gum arabic, 1 dram; simple syrup, ½ oz.; cinnamon water, 2 ozs. Mix. To be taken at a draught.

156. Sugar of lead, 16 grs.; prepared chalk, 1 dram; pulverized ipecac, 4 grs.; pulverized opium, 2 grs. Mix. Divide into 16 portions, one to be given every three or four hours.

157. Sugar of lead, 8 grs.; vinegar, 8 drops; white sugar, 1 dram, soft water, 1 oz. Mix. A teaspoonful three or four times a day, until the discharges are abated.

158. Prepared chalk, ½ dram; pulverized ipecac, 3 grs. Mix. Make 12 powders. Give one, two or three times a day.

159. Pulverized catechu, 2 drams; bruised cinnamon, ½ dram; boiling water, 5 ozs. Steep in a covered vessel for one hour and strain. A teaspoonful every two, three, or four hours, according to age, nature of the case, etc.

160. Soft water, 1 oz.; sugar of lead, 5 grs.; vinegar, 6 drops; loaf sugar, 3 drams. Mix. A teaspoonful every hour or two.

161. Tincture of catechu, ½ oz.; laudanum, 2 drams; spirits of camphor, 2 drams; tincture of myrrhæ, 2 drams; tincture of cayenne, 2 drams. Mix. Dose, from half a teaspoonful to a teaspoonful, for diarrhœa.

162. Syrup of orange-peel, 1 oz.; tincture of catechu, 2 grs.; tincture of cinnamon, 6 drams; tincture of cardamom, 2 drams. Mix. Dose, a teaspoonful. A valuable remedy in diarrhœa.

Counter-Irritants.

163. Tincture of Spanish flies, 1 oz.; olive oil, 2 ozs.; alcohol, ½ pint. Mix. To be applied externally, watching the effect, so as not to produce a blister.

164. Water of ammonia, 1 dram; olive oil, 1 oz. Mix. Apply to the skin.

165. Mustard powder, 1 tablespoonful. Mix with a little water to make a thick paste. Then spread upon a piece of brown paper or cotton cloth, and cover its surface with a piece of thin muslin to prevent the mustard from sticking to the flesh. Place it upon the sore or painful part, and keep it on fifteen or twenty minutes, or till a good degree of redness is produced.

166. Vinegar of Spanish flies, 1 oz.; spirits of camphor, 1 oz. Mix. To be rubbed gently upon the skin. If applied freely, and rubbed thoroughly in, it may produce a blister.

167. Yellow wax, rosin, lard, each, 6 drams. Melt over a slow fire, and then stir in slowly, when at a very moderate degree of warmth, 1½ drams of pulverized Spanish flies, to make an ointment.

168. Water of ammonia, strong, 1 oz.; alcohol, 1 oz. Mix. Wet a piece of cotton cloth, and lay it upon the painful part, and cover it with flannel to prevent evaporation.

Ointments.

169. Mercurial ointment, 1 oz.; extract of belladonna, 1 oz.; extract of henbane, 1 oz.; camphor, 10 grs. Mix. For external use.

170. Extract of belladonna, ½ dram; vaseline, ½ oz. Mix. To be rubbed on the neck of the womb in painful menstruation.

171. Prussic acid, 2 drams; sugar of lead, 1 dram; cocoanut oil, ½ oz.; vaseline, ½ oz. Make an ointment.

172. Neapolitan ointment, 2 drams; extract of belladonna, 1 dram. Mix. For external use.

173. Extract of belladonna, 15 grs.; vaseline, 1 oz. Mix. For external use.

174. Sulphuret of lime, 1 dram; camphor, in powder, 15 grs.; vaseline, 1 oz. Make an ointment.

175. Elder-flower ointment, 1 oz.; oxide of zinc, 1 dram. Make an ointment.

176. Oxide of zinc, ointment, 1 oz.

177. Naphthaline, 40 grains; vaseline, 1 oz. Make an ointment. To be spread upon linen, and applied to the diseased skin night and morning.

178. Mild nitrate of mercury ointment, 3 drams; sugar of lead, 16 grs.; rose-water ointment, 1 oz.

179. Laudanum, ½ dram; sulphur, ½ dram; oxide of zinc, 1 dram; oil of almonds, 1 oz.; vaseline, 3 ozs. Make an ointment.

180. Olive oil, 4 ozs.; white wax, 2 drams. Melt these together, and then add honey, 2 drams; croton oil, 20 drops.

181. Elder-flower ointment, 1 oz.; pulverized blue vitriol, 1 scr. Make an ointment.

182. Purified beeves' marrow, or lard, 6 drams; oil of sweet almonds, 2 drams; pulverized Peruvian bark, 1 dram. Mix.

183. Pulverized sulphate of copper, 10 grs.; extract of Spanish flies, 5 grs.; vaseline, 1 oz. Mix. Rub into the scalp.

184. Iodide of lead, 1 dram; vaseline, 2 ozs. Mix. To be rubbed on the surface.

185. Iodide of potassium, 1 dram; vaseline, 2 ozs. Mix.

186. Basilicon ointment, 1 oz.; red precipitate, 1 dram. Mix.

187. Iodide of potassium, ½ dram; vaseline, 1 oz. Mix.

188. Veratria, 4 grs.; vaseline, 5 drams. Mix.

189. Tobacco leaves (fresh and sliced), 10 ozs.; diluted acetic acid, 4 pints; basilicon ointment, 13 ozs. Boil the tobacco in the acid, strain, and evaporate the decoction to six ounces. Add this to the basilicon ointment, heated, and stir till cold. For gathered breasts.

Liniments.

190. Sweet oil, 1 oz.; strong water of ammonia, 1 oz. Mix. To be rubbed on with a piece of flannel.

191. Lime-water, 2 ozs.; flax-seed oil, 2 ozs. Mix. Apply outwardly.

192. Olive-oil, 1 oz.; solution of potassa, 2 drams; strong mercurial ointment, 1 dram. Mix.

193. Olive-oil, 4 ozs.; oil of amber, 2 drams; oil of rosemary, 2 drams. Mix.

194. Spirits of turpentine, 1 oz.; linseed oil, 1 oz.; lime-water, 1 oz. Mix. For external use.

195. Oil of hemlock, 2 drams; oil of origanum, 1 dram; camphor, 1 dram; opium, 1 dram; alcohol, 4 ozs. Mix.

196. Soap liniment, 2 ozs.; chloroform, 1 dram. Mix.

197. Tincture of aconite-root, ½ oz.; opium liniment, ½ oz. Mix. For neuralgia, etc. Apply a teaspoonful to the painful part.

198. White soap, 12 ozs.; camphor, 6 ozs.; oil of rosemary, 1½ ozs.; alcohol, 4 pints; opium, 3 ozs. Mix and filter. An excellent liniment, acting at times like a charm in the removal of local pains.

199. Sulphuric acid, 1 dram; spirits of turpentine, 1 dram; olive oil, 3 drams. Mix the oil and spirits of turpentine first, then gradually add the sulphuric acid. A valuable liniment for chilblains. To be rubbed on two or three times a day.

Washes, Lotions, Gargles, etc.

200. Bruised white-oak bark, 1 oz.; water, 1½ pints. Boil down to a pint, and strain. To be used as a wash.

201. Borate of soda or borax, 2 drams; water, 4 ozs. Mix. To be used as a lotion.

202. Alum, 2 drams; water, 4 ozs. Mix. To be used as a lotion.

203. Tannin, 20 grains; water, 4 ozs. Mix. For external use.

204. Biborate of soda, ½ oz.; rose-water, 6 ozs.; sulphate of morphia, 6 grs. Mix. To be used as a wash in itching of the female privates.

205. Chlorinated soda, 1 oz.; water, 12 ozs. Mix. Rinse the mouth with it two or three times a day, but do not swallow.

207. Rose-water, 5 ozs.; sugar of lead, 8 grs.; sulphate of zinc, 8 grs. Mix. Use externally.

208. Rose-water, 4½ ozs.; nitrate of silver, 2 grs. Mix. Wash.

209. Sulphate of zinc, 8 grs.; tannin, 20 grains; water, 5 ozs. Mix. Wash.

210. Chloride of zinc, 6 grs.; soft water, 2 ozs. Mix. Injection.

211. Nitrate of silver, 10 grs.; soft water, 1 oz. Mix. Apply externally.

212. Corrosive sublimate, 4 grs.; soft water, 1 pint. Mix. Apply externally.

213. Alcohol, 1 pint; soft soap of potash, 1 pint. Dissolve and filter; then add oil of citron, 1 oz. Mix. It will answer a good purpose if the oil of citron be omitted. Apply externally.

214. Tincture of iodine, 1 dram; carbolic acid, 5 grs.; soft water, 1 oz. Mix. Apply with a piece of lint tied to the end of a stick.

215. Copperas, 1 oz.; soft water, 1 pint. Mix. A lotion.

216. Alcohol, 1½ ozs.; rose-water, 4 ozs. Mix. A lotion.

217. Corrosive sublimate, 2 grs.; spirits of rosemary, 1 oz.; alcohol, 1 oz.; emulsion of bitter almonds, 6 ozs. Mix. A lotion.

218. Solution of sugar of lead, 12 drops; laudanum, 1 dram; water, 4 ozs. Mix. To be applied externally only.

219. Argyrol, 1½ drams; soft water, 1 oz. Mix. A lotion.

220. White vitriol, 1 dram; rose-water, 3 ozs. Mix. Apply outwardly.

221. Hydrocyanic acid, 4 drams; sugar of lead, 15 grs.; alcohol, 4 drams; water, 7 ozs. Mix. Apply externally.

222. Corrosive sublimate, 2 grs.; almond mixture, ½ pint. Mix. Apply externally.

223. Rose-water, 4 ozs.; pulverized borax, ½ oz.; sulphate of morphine, 6 grs. Mix. To be applied to the parts many times a day.

224. Sugar of lead, 2 drams; laudanum, 1 dram; soft water, ½ pint. Mix. For external use.

225. Corrosive sublimate, 2 grs.; cologne, 2 ozs.; soft water, 6 ozs. Mix. For external use only.

226. Acid nitrate of mercury, 1 dram; soft water, 4 ozs. Mix. Apply every second day with shower syringe.

227. Sugar of lead, 3 grs.; soft water, 1 oz. Mix. As a wash in inflammation of the mouth in infants.

228. Mucilage of gum arabic, 1 oz.; syrup of orange-peel, ½ oz.; chloride of lime, 15 grs. Mix. Use as a wash.

229. Decoction of Peruvian bark, 3 ozs.; syrup of orange-peel, 1 oz.; chloride of soda, 1 oz. Mix. Use as a wash.

230. Creosote, 4 drops; mucilage of gum-arabic, ½ oz.; camphor-water, 8 ozs. Mix. For external use.

231. Vinegar, 1 dram; alcohol, 3 drams; simple syrup, 1 oz.; water, 3 ozs. Mix. A lotion

232. White-oak bark, 1 oz.; water, 1 pint. Boil away one quarter, and strain; then add alum, 20 grs. Apply to the parts with a soft sponge, or dossil of lint, several times a day.

233. Hydrochloric acid, ½ dram; honey, 1 oz.; rose-water, 1 oz. Mix. Apply three or four times a day.

234. Sulphate of copper, ½ dram; soft water, 1 oz. Mix. To be applied twice a day to the ulcers in gangrene of the mouth.

235. White vitriol, 1 dram; soft water, 2 drams. Mix. Then add honey, 2 drams; tincture of myrrh, 2 drams. To be applied twice a day to the ulcers in gangrene of the mouth.

236. Creosote, 1 dram; alcohol, 1 dram. Mix. To be applied, with a camel's-hair pencil, to the gangrenous ulcers of the mouth, after running a lancet through the sloughs, and touch with a little strong carbolic acid till surface is white. Can repeat next day.

237. Acid nitrate of mercury, ½ dram; soft water, 1 oz. Mix. To be injected into the throat with the shower-syringe, or applied to ulcers with a camel's-hair pencil.

238. Rose-water, 4 ozs.; sugar of lead, 2 drams. Mix. For external use.

239. Rose-water, 2 ozs.; sugar of lead, 20 grains. Mix. For external use.

240. Tincture of arnica, ½ oz.; cold water, 4 ozs. Mix. For external use.

241. Tincture bloodroot, 2 ozs.; solution chloride of soda, 2 ozs.; tinct. henbane, 2 ozs. Mix. For external use.

242. Bucket of warm water; cayenne pepper, pulverized, 1 tablespoonful; ground mustard, 2 tablespoonfuls. Mix. As a foot-bath in suppression, etc.

243. Chlorate of potash, ¼ oz.; strong hydrochloric acid, 40 drops; water, 1 pint. Mix. An excellent wash for chronic fetid ulcers, — soon converting a foul ulcer to a healthy-looking one. A good gargle.

244. Powdered golden seal, 1 dram; powdered cranesbill, 1 dram; powdered witch-hazel bark, 1 dram. Mix. Pour upon these half a pint of boiling water. Let them stand till cold. To swab an ulcerated throat in scarlet fever, and for other purposes. Still better, listerine, 1 oz.; peroxide of hydrogen, 2 ozs.; water, 1 oz. Use as a gargle.

245. Peroxide of hydrogen, 4 ozs.; glycerine, 2 ozs.; water, 2 ozs. Mix and use frequently as a gargle.

Injections.

246. Castor oil, 1 gill; pulv. cayenne, 10 grs.; molasses, 1 gill; table salt, 1 teaspoonful; warm water, 1 pint. Mix.

247. Senna leaves, 2 drams. Steep in a pint of water. Then add one ounce of epsom salts, and strain. A quarter of this may also be taken as a brisk purge.

248. Castor oil, 2 ozs.; tincture prickly-ash bark, ½ oz.; comp. tinct. of Virginia snake-root, 2 drams; infusion of boneset and senna, equal parts, ½ pint. Mix.

249. Castor oil, 1 oz.; salts of tartar, ½ oz.; warm water, 1 pint. Mix.

250. Epsom salts, 1 oz.; senna leaves, ½ oz.; pulv. cayenne, 10 grs.; boiling water, 1 pint. Let the water stand upon the senna and cayenne fifteen minutes. Then pour it off, and add the salts.

251. Thoroughwort, 1 oz.; senna, 1 oz.; lobelia, ½ dram; cayenne, 10 grs.; epsom salts, 1 tablespoonful; molasses, ½ pint; boiling water, 1 pint. Make a strong decoction of the herbs, and then add the salt and molasses.

252. Wine of ipecac, 1 oz.; spirits of turpentine, 1 oz.; castor oil, 1 oz.; molasses, ½ pint; warm water, ½ pint. Mix.

253. Flax-seed tea, ½ pint; laudanum, 40 drops. Mix.

254. Tincture of iodine, 1 dram; corrosive sublimate, 5 grs.; sugar of lead, 1½ drams; white vitriol, 1½ drams; soft water, 6 ounces. Mix. An injection for certain forms of whites, etc. Or corrosive sublimate tablets, 1 to 3 pints of water used night and morning.

255. Bruised galls, ½ oz.; two large poppy-heads; water, 1 pint. Boil a quarter of an hour, and strain. For piles.

256. Common salt, 1 oz.; chamomile flowers, ½ oz.; pulv. aloes, 1 dram. Boil the chamomile and aloes five minutes, in one pint of water, then strain and add the salt.

Hair-Oils, Washes, etc.

257. Cologne, 2 ozs.; tincture of Spanish flies, 2 drams; oil of rosemary, 10 drops; oil of lavender, 10 drops. Mix. Apply cautiously. If soreness of the scalp is produced, omit for a short time.

258. Castor oil, 2½ pounds; strongest alcohol, 2½ pints; pulverized Spanish flies, ½ oz.; oil of bergamot, 2½ ozs.; otto of roses, 20 drops

Mix. Let them stand for a few days, and filter. A superior preparation for keeping the hair from falling, and to prevent dandruff.

259. Tincture benzoin comp., 2 drams; tinct. Spanish flies, 2 drams; castor oil, 6 ozs.; oil bergamot, 1 dram; oil of cassia or verbena, 15 drops; strong alcohol, 9½ ozs. Mix. As a hair wash, better even than the above.

260. Slaked lime, 2 drams; bicarbonate of soda, 3 drams; lard, 2 ozs. Mix. To remove hair.

261. Slaked lime, 1 oz.; bicarbonate of potassa, 2 ozs.; charcoal in powder, 1 dram. Mix. Apply to the parts, and wash off when dry. Keep in well stopped bottles. To remove hair.

262. Slaked lime, 4 ozs.; orris powder, 1½ ozs. Mix. Apply to the parts, and wash off when dry. To remove hair.

263. Spanish white, ¼ pound; litharge, ¼ pound; slaked lime, ½ pound. Mix. Pulverize in a mortar. To be kept dry. When used, mix with water to a paste the thickness of cream. Spread on the hair and lay over it a wet cloth over night. For coloring the hair.

264. Sulphur, 1 oz.; sugar of lead, 1 oz.; rose-water, 4 ozs. Mix. Apply to the hair. For coloring the hair.

265. Nitrate of silver, 1 dram; nitric acid, 1 dram; soft water, 1 pint; sap green, 3 drams; pulverized gum-arabic, 1 dram. Mix. Keep well corked. For coloring the hair.

266. Hydrosulphuret of ammonia, 1 oz.; liquor potassa, 3 drams; soft water, 1 oz. Mix. Apply this with a tooth-brush fifteen or twenty minutes. Then brush the hair over with the following: nitrate of silver, 1 dram; soft water, 2 ozs., using a clean comb to separate the hair. For coloring the hair.

Miscellaneous.

267. Fluid extract of spurred rye, 2 ozs. Dose, one teaspoonful three times a day. For profuse menstruation from a relaxed state of the womb.

268. Sulphate of iron, 1 dram; sub-carbonate of potash, 1 dram. Mix, and make into 38 pills. One pill twice a day, and gradually increasing to four a day, in chlorosis.

269. Sulphate of iron, 1 dram; extract of hops, 15 grs.; extract of poppies, 15 grs.; oil of cinnamon, 15 drops. Mix, and make into 24 pills. One pill two or three times a day.

270. Oxide of zinc, 2 drams; bismuth subnit., 2 drams. Mix. Make 48 pills. One pill three times or more daily.

271. Pulverized savin, 1 scruple; sulphate of copper, 1 scruple. To be sprinkled on venereal lumps or tumors, called condylomata, on the female genitals, or elsewhere.

272. Balsam of copaiba, 1 oz.; oil of cubebs, 2 drams; laudanum, 1 dram; mucilage of gum arabic, 2 ozs.; sweet spirits of nitre, ½ oz.; compound spirits of lavender, 3 drams; camphor-water, 4 ozs.; white sugar, 2 drams; oil of partridge-berry, 5 drops. Mix. Take a tablespoonful three or four times a day. For gonorrhœa; or capsules of copaiba and cubebs.

273. Balsam of copaiba, 1 oz.; pulverized cubebs, 2 ozs.; essence of peppermint, 30 drops. Mix. Dose, ten grains in a capsule three times a day.

274. Pulverized borax, 1 oz.; pulverized white sugar, 1 oz. Mix. A little to be dissolved on the tongue.

275. Pulverized borax, ½ oz.; honey, 4 ozs. Mix. Teaspoonful four times a day.

276. Hydrochloric acid, 1 dram; honey, 1 oz. Mix. For touching large curdy patches in sore mouth of children.

277. Pulverized ipecac, 3 grains; precipitated sulphur, 2 scruples; extract of hyoscyamus, 6 grains. Mix. Divide into 12 parts. One to be taken every three or four hours.

278. Pulverized belladonna-root, 5 grains; compound ipecac powder, 10 grains; precipitated sulphur, ½ dram; white sugar, 2 scruples. Mix. Make 20 powders. One every three hours to a child two years old.

279. Pulverized alum, 25 grains; extract of cicuta, 12 grains; syrup of red poppies, 2 drams; spearmint water, 3 ozs. Mix. A dessert-spoonful every six hours for a child two or three years old.

280. Camphor, 1 dram; sulphuric ether, 1 oz. Mix. Ten drops every half hour.

281. Pulverized rhubarb, 20 grains; 10 grains Gray powders; aromatic powder, 5 grains. Mix. Divide into 10 powders. One every four or five hours.

282. Pulverized bloodroot, ½ to 1 oz.; chloride of zinc, ½ to 2 ozs.; water, 2 ozs. Add enough wheat flour to make a paste as thick as molasses. External use.

283. Sal. volatile, ½ dram; camphor-water, 1 oz. Mix. A dose.

284. Tincture of nux vomica, ⅓ oz.; tinct. aconite, 2 drams; volatile tinct. of guaiacum, 2 drams. Mix. Thirty drops every three hours.

285. Tincture of black cohosh, 2 ozs.; tinct. of digitalis, 2 drams. Mix. One teaspoonful from two to five times a day.

286. Barberry bark, 1 oz.; pipsissewa herb, 2 ozs.; wild cherry bark, 1 oz.; bitter-root, 1 oz. Mix. Infuse for several hours in 4 pints of water. One tablespoonful three or four times a day.

287. Horse-radish root, 1 oz.; bayberry bark, 1 oz.; barberry bark, 1 oz.; wild cherry bark, 1 oz.; prickly-ash bark, 1 oz. Reduce the whole to a coarse powder, and infuse for several hours in 4 pints of cider. A tablespoonful three or four times a day.

288. Mercury, 95 parts; balsam of storax, 48 parts; diacalon plaster, 312 parts; wax, rosin, turpentine, each, 16 parts; ammonia, bdellium, each, 5 parts; olibanum and myrrh, each, 5 parts; saffron, 3 parts; spirits of lavender, 2 parts. Mix, and spread. For external use only.

289. Populin, 20 grs.; sanguinarin, 10 grs.; pulv. white sugar, 30 grs. Rub well together, and divide into 16 powders. Take one four times a day. At the same time use prescription 73.

290. Ptelein, 24 grs.; hydrastin, 24 grs.; extract of belladonna, 3 grs.; extract of nux vomica, 2 grs. Mix. Make 24 pills. Take one three times a day.

291. Strychnia, 2 grs.; pulv. cantharides, 4 grs.; pulv. arnica-leaves, 1 dram. Mix. Divide into 32 powders. One to be taken three times a day.

292. Wine of colchicum seeds, 1 oz.; fluid extract of dandelion, 1 oz. Mix. One teaspoonful three times a day.

293. Willow-bark, 1 oz.; boiling water, 1 pint. Boil for ten minutes, and strain. Dose, a wineglassful once in three hours.

294. Canada balsam, 1 dram; slaked lime, 1 dram. Mix, to form a paste. An excellent remedy for toothache, when pressed into the cavity; or use a drop or two of a 4 % cocaine solution.

295. Tincture black cohosh, 1 oz.; iodide of potassium, 2 drams; syrup of ipecac, 1 oz.; spring water, 2 ozs. Mix. A teaspoonful three or four times a day, in rheumatism and cell-dropsy.

296. Tincture black cohosh, 1 oz.; tinct. myrrh, 6 drams; camphor, 1 dram; tinct. cayenne, 1 dram. Mix. Take 30 or 40 drops four times a day, for dropsy.

297. Solution chloride of soda, 6 drops; water, 2 ozs. Mix. To be taken at a draught. A sure remedy for offensive breath from deranged stomach.

298. Cream of tartar, ½ oz.; fresh lemon-peel, bruised, 4 ozs.; white sugar, 4 ozs.; boiling water, 3 pints. Mix, and after standing a while, strain. Drink this quantity daily.

299. Citric acid, ½ dram; bi-carbonate of potassa, ½ dram; lemon syrup, 1 oz.; soft water, 6 ozs.; epsom salts, 1 oz. Mix. Two tablespoonfuls, to be repeated every four hours, if necessary.

300. Hardwood ashes, 1 quart; common soot, ½ gill; water, 6 pints. Digest, settle, and filter. Take one tablespoonful three times a day, in acidity of stomach. Milk of magnesia is also a very simple and efficient remedy.

301. Peppermint water, 1½ ozs.; wine of colchicum-root, ½ oz.; iodide of potash, 3 drs.; magnesia, 20 grains. Dose. — One teaspoonful three or four times a day. Excellent for rheumatism of a chronic or gouty type. For the acute form of ordinary rheumatism, some form of salicylic acid must be used, like the following: Salicylate of soda, 4 drs.; tinct. cardamom comp., tinct. gent. comp. of each, 2 oz. Mix, and take one teaspoonful in water every two hours, till ears ring, then once in three or four hours. Tongaline in one-dram doses, every two hours, is an excellent all-round rheumatic medicine.

302. Cream of tartar, 1½ ozs.; sulphate potassa, ½ oz.; pulv. squills, 2 drs.; tartar emetic, 2 grs. A teaspoonful of this mixture to be taken four or five times a day, in dropsy.

303. Pulv. alum, ½ dram; white precipitate, 1 grain. Rub these well together, and place the powder in a bottle; then add 1½ drams of glycerin. Shake the bottle until the mixture is of the consistence of cream, and repeat the shaking whenever it is about to be applied to the skin. For external use in erysipelas.

304. Copaiba, 5 drams; yolk of one egg; gum of extract of opium, 1 grain; water, 7 ounces. Mix. To be used as an injection several times a day in gonorrhœa.

305. Tannin, 3 grains; extract belladonna, ¾ gr.; extract conium, 2½ grains; infusion of senna, 3 ozs.; fennel-water and syrup of marshmallow, each 1½ ozs. Mix. A tablespoonful to be taken every two hours, in chronic bronchitis and other complaints.

306. Glycerin, 1 dram; tannin, 1 dram. Dissolve the tannin in the glycerin. Excellent for sore nipples, and for chaps and excoriations generally.

307. Collodion, 1 oz.; venice turpentine, ½ oz.; castor oil, 2 drams. Mix. To be applied outwardly, for chilblains and chaps. For cancer, manganic acid. Not as painful as other caustics.

308 Sulphate of copper, 2 grains wine of opium, 1 dram; soft water, 2 drams Mix. Apply freely with a soft camel hair brush, three times a day, for purulent ophthalmia.

309. Pure acetic acid, 2 drams; soft water, 3 ozs.; simple syrup, 3 drams. Mix. A teaspoonful is to be taken every three hours, in scarlet fever, at the same time using sheet baths with tepid water.

310. Compound tincture of Peruvian bark, 4 ozs.; citrate of iron, 44 grains; citric acid, 20 grains. Dissolve the citric acid in the tincture, and then the citrate of iron. After a few days filter. Dose, one to two teaspoonfuls

311 No. 1. Gallic acid, 10 grains; dissolve in alcohol, 2 drams; water, 6 drams. No 2. Crystals of nitrate of silver, ½ dram; water, ½ oz. Dissolve and add strong liquor of ammonia till it becomes clear; then add powdered gum-arabic, and dilute, if necessary, to 6 drams. This will color black; to color *brown*, reduce it. An excellent hair-dye. Use the common directions where there is a No. 1 and No 2

312. Epsom salts, 2 drams; magnesia, 20 grains; syrup of ginger, 1 dram; spearmint water, 11 drams. Mix. To be taken at a draught. This will be retained by the stomach when most other things are rejected.

313. Diluted nitro-muriatic acid, 2 drams; sweet spirits of nitre, 2 drams; simple syrup, ½ oz.; water 7½ ozs. Two tablespoonfuls are to be taken three times a day. Excellent in dyspepsia, with foul tongue and inactive liver.

314. Rose-leaves, 20 grains; boiling water, 8 ozs.; diluted nitric acid, 2½ drams. Mix. After standing half an hour, strain, and use as a wash for ulcers.

315. White vitriol, 1 dram; water, 1 pint. Mix. To be used as a wash for ulcers, etc.

316. Citrate of iron and strychnine, 1 dram; syrup of orange-peel, 2 ozs.; soft water, ½ pint. Mix. Give one teaspoonful three times a day in neuralgia, and in other cases in which a nerve-tonic is needed.

317. Aloes and soap pill, 10 grains. Divide into two pills; or, compound pill of aloes, 10 grs. Divide into two pills. Dose, one to two pills at bedtime; avoid in pregnancy and piles.

318. Compound colocynth pill, 50 grains; castile soap, 9 grs.; oil of anise, 2 drops. Mix, and make 12 pills. Two to be taken at bedtime.

319. Compound tincture of senna, 2 drams; epsom salts, 2 drams; diluted sulphuric acid, 8 drops; spirits of nitric ether, ½ dram; infusion of rhubarb, 10 drams. Mix. To be taken at a draught. A physic.

320. Sulphate of iron, 2 grs.; epsom salts, 40 grains; diluted sulphuric acid, 10 drops; compound tincture, 1 dram; syrup of poppies, 1½ drams; pimento water, 9 drams. To be taken at a draught twice a day.

321. Pulverized rhubarb, 12 grs.; carbonate of magnesia, 10 grs.; aromatic spirit of ammonia, ½ dram; syrup of ginger, 1 dram; spearmint water, 10 drams. Mix. To be taken at a draught.

322. Comp. infusion senna, 5 drams; infusion rhubarb, 5 drams; comp. tincture cardamon, ½ dram; syrup, 1½ drams. Mix. To be taken at a draught, by dyspeptic persons.

323. Carbonate of soda, 10 grs; aromatic spirit of ammonia, ½ dram; tincture of orange-peel, 1 dram; syrup of orange-peel, 1 dram; compound infusion of gentian, 10 drams. Mix. To be taken at a draught twice a day.

324. Trisnitrate of bismuth, 1 dram; comp. tragacanth powder, 2 drams; compound tincture cardamom, ½ ounce; tincture of ginger, ½ oz.; spearmint water, 7 ounces. Mix. Two tablespoonfuls to be taken twice a day, in dyspepsia.

325. Solution of acetate of ammonia, ½ oz.; tincture of orange-peel, 1 dram; syrup of orange-peel, 1 dram; tincture of cayenne, 20 drops; comp. infusion of orange-peel, 6 drams. Mix. The whole to be taken to relieve headache, after intoxication.

326. Magnesia, 15 grs.; solution of potassæ, 15 drops; comp. tincture of senna, 1 dram; comp. infusion of senna, 6 drams; syrup of ginger, 1 dram; comp. infusion of orange-peel, ½ oz. Mix. Taken at a draught, as an aperient, in sick and bilious headaches.

327. Aromatic spirits of ammonia, 1 dram; tincture of colombo, 1 dram; infusion of colombo, 10 drams; syrup of poppies, 1 dram. Mix. To be taken at a draught, three times a day.

328. Diluted sulphuric acid, 15 drops; diluted hydrochloric acid, 10 drops; tincture of orange-peel, 1 dram; comp. infusion of gentian, 6 drams; syrup of poppies, 1 dram. To be taken at a draught, three times a day, half an hour before meals.

329. Diluted nitric acid, 12 drops; diluted hydrochloric acid, 8 drops; infusion of cascarilla, 11 drams; syrup of poppies, 1 dram. Mix. To be taken at a draught, twice a day.

330. Colocynth co., 6 grs.; comp. pill of rhubarb, 4 grs.; ext. hyoscyamus, 2 grs. Mix. Make two pills; 1 pill to be taken at night.

331. Ext. hyoscyamus, 2½ grs.; pulv. camphor, 2½ grs. Mix. Make two pills; one to be taken when the pain is most severe, in nervous headache; or even better, acetanilid, 8 grs.; camphor, 2 grs.; citrate of caffeine, 4 grs. Divide in four capsules, one every half-hour, for three or four times.

332. Comp. tragacanth powder, 8 grs.; oil of lemon, 3 drops; camphor-water, 11 drams; comp. tinct. cardamom, ½ dram; tincture hyoscyamus, ½ dram; chloroform, 15 drops. Mix. Dose, one to two teaspoonfuls.

333. Tinct. hyoscyamus, ½ dram; aromatic spirit of ammonia, ½ dram; syrup of orange-peel, ½ dram; peppermint water, 10 drams. Mix. In nervous and hysterical cases take half the quantity. Repeat in two hours if needed.

334. Soap liniment, 2½ ozs.; liquor ammonia, ½ dram; laudanum, ½ oz. Mix. Make a liniment.

335. Comp. pill of colocynth, 7 grs.; ext. of colchicum, 2 grs.; oil of caraway, 1 drop. Mix, and make two pills. To be taken at bedtime in rheumatic headaches. Physic.

336. Chloride of zinc, 6 oz.; pulv. bloodroot, 2 ozs.; myrtle wax, 1 oz.; water of extract of opium, 6 drams; extract of conium, 6 drams. Mix, and make an ointment.

337. Iodide of lead, 20 grs.; glycerin, 1 dram; spermaceti ointment, 2 ozs. Make an ointment.

338. Phosphate of soda, 3 ozs.; sulphate of soda, 1 oz.; iodide of potash, 1 dram. Teaspoonful in ½ glass of hot water on arising.

339. Ext. belladonna, 6 grs.; pulv. ipecac, 10 grs.; confection of roses, 2 grs. Mix. Make 30 pills, one pill to be taken twice a day.

340. Dioscorein, 12 grs.; pulv. camphor, 4 grs.; pulv. cayenne, 12 grs., white sugar, 20 grains. Mix. Divide into four powders. Give one every fifteen minutes.

341. Leptandrin, 12 grs.; geranium, 12 grs.; myricin, 12 grs. Mix. Divide into twelve powders, of which one may be given three or four times a day.

342. Quinine, ½ dram; pulv. catechu, 1 dram; pulv. opium, 15 grs. Mix. Make 32 pills. Give one pill three times a day.

343. Compound syrup of rhubarb and potassa, 4 ozs.; tincture of prickly-ash berries, 1 oz.; essence of peppermint, 1 dram; paregoric, 4 drams. Mix. A tablespoonful should be given every hour until it operates gently on the bowels.

344. Pulv. camphor, ½ dram; pulv. opium, 16 grains; pulv. cayenne, ½ dram. Mix. Make 16 pills; one every hour, in cholera.

345. Rhubarb, 4 ozs.; black-cohosh root, 2 ozs.; wild-cherry bark, 2 ozs.; geranium, 2 ozs.: coarsely powder them, and mix. Add two pints of brandy and two pints of water. Let the mixture stand five or six days, stirring often, and then strain. Add four pints of water to the dregs, boil slowly to two pints, strain, and add to this the previous tincture. Sweeten with white sugar. Take a tablespoonful every one, two, or three hours.

346. Beth root, 1 oz.; geranium, 1 oz.; blackberry-root, 1 oz.; wild-cherry bark, 1 oz.; cinnamon, 1 oz. Powder the whole, and add to them 1½ pints brandy, and 1½ pints water. Let them stand several days, stirring frequently. Add sweetening if preferred. Dose, one or two teaspoonfuls every two or three hours.

347. Raspberry leaves, 1 oz.; geranium, 1 oz.; blackberry-root, 1 oz. leptandra root, 1 oz. Mix, and make three pints of strong decoction. Dose, a teaspoonful every hour. Suitable for a gargle.

348. Sugar of lead, 24 grs.; vinegar, 1 dram; syrup of poppies, 1 oz.; rose-water, 3 ozs.; soft water, 4 ozs. Mix. Dose, one or two tablespoonfuls.

349. Potassio-tartrate of iron, ½ oz.; syrup of orange-peel, 1 oz.; water, 4 oz. Mix. Take two teaspoonfuls three times a day.

350. Geranium, golden seal, marshmallow, wild-indigo root, rosemary, each half an ounce. Mix, and make one pint of strong infusion. After straining, add two drams powdered borax and one gill of honey. An excellent astringent gargle.

351. Bromide of soda, 3 drams; syrup of orange, or any other syrup, three ounces. Take one teaspoonful in water as often as needed. For headache, nervousness, etc., can take every half-hour.

352. Wine of ipecac, 10 drops in water every half-hour to croupy child, one year old; 30 drops to vomit the child.

353. Hydrochlorate of ammonia, ½ oz.; diluted acetic acid, ½ oz.; alcohol, ½ oz.; camphorated mixture, 15 ozs. Mix. A good scattering wash for hydrocele, etc.

354. Camphor, 3 drams; alcohol, 2 ozs.; ether, 1 oz. Shake and paint on inflamed surface with camel's-hair brush.

355. Antipyrin, 3 drams; syrup or water, 2 ozs. Teaspoonful every hour till fever is less; or phenacetine, 8 grs., every two hours till fever is subdued, then once in four hours.

356. Chloral hydrate, 4 drams; syrup acacia and syrup checkerberry, of each, 1 oz.; Teaspoonful in water every hour till asleep. If the taste is very objectionable it may be taken in two teaspoonful doses by rectum in a little cold starch-water.

357. Bromidia; teaspoonful in water every hour till asleep.

358. Jaborandi, fluid extract, 3 drams; syrup, 1 oz. Teaspoonful every hour, to produce sweating.

359. Pill, compound cathartic. Two for a dose.

360. "Green Soap." Rub well in at night and wash off in the morning with water.

361. Powdered camphor and chloral, equal parts, sufficient quantity to make a liniment, rubbed well together. External use.

362. Wilkinson's Ointment. (See Scabies.)

363. Dilute hydrocyanic acid, 1 dram; solution acetate of ammonia, 2 ozs.; tincture digitalis, 3 drams; rose-water, 5 ozs. For pruritus, itching, etc.

364. Corrosive sublimate, ½ gr.; tincture benzoin, ½ dram; almond emulsion, 1 oz. Used as an ointment to destroy the epidermis in cases of freckles, acne, pimples, etc.

365. Alum, 5 parts; salicylic acid, 45 parts. Dust on freely.

366. Corrosive sublimate, ½ gr.; dissolved in 1 oz. tincture of myrrh. Paint on to the part affected by ringworm night and morning.

367. Bromide of soda and ammonia, 20 grs. each, in a cup of valerian tea four times a day. Increase up to 8 or 10 times a day if former dose proves insufficient. Take also daily oxide of zinc and extract of belladonna, of each ½ gr., morning and night. In bad cases use pill 4 times daily.

368. Fluid extract gelseminum, 3 drops in water every half hour for 3 or four times. Useful in facial neuralgia; or exalgine, 4 grs. every hour for two or three times.

369. Atropia, $\frac{1}{100}$ of a gr. One such pill each night for sweating; one such pill 2 or 3 times a day for acute cold in head, with watery secretions; or pill "coryza," one every half hour for three times, then once an hour till throat is dry, afterwards once in three or four hours.

370. Sulphate quinine, $\frac{1}{2}$ gr.; ext. belladonna, $\frac{1}{40}$ gr.; pulv. ipecac, $\frac{1}{10}$ gr.; comp. ipecac powder, $\frac{1}{10}$ gr. One such pill every two hours, for chronic bronchitis and emphysema.

371. Carron oil. Made by adding equal parts linseed-oil and lime-water. For burns, apply freely; also boracic acid, 18 grs., dissolved in 1 dram hot glycerin and olive-oil, 1 oz. An ointment.

372. Camphor, 8 grs.; carbolic acid, 8 grs.; starch, 2 drams; oxide of zinc, 2 drams; vaseline, $\frac{1}{2}$ ounce. Make an ointment.

373. Carbolic acid, 20 drops; calamine, 1 dram; glycerine, $\frac{1}{2}$ dram; water, 6 ounces. Make a lotion.

374. Fuller's earth, Comfort Powder, Talcum Powder and similar preparations are excellent for the ordinary superficial variety of acute eczema. Particularly useful on chafing and oozing surfaces.

375. Salicylic acid, 30 grs.; green soap, 1 dram; vaseline, 1 ounce. Mix and make ointment. To be applied twice daily. This ointment may be gradually increased in strength till the desired effect is produced. It should thin out the thickened, scaly skin. If too much redness or other irritation is produced, stop ointment for a day or two and use vaseline.

Dictionary of Drugs and Medicines

GIVING THEIR

LATIN AND ENGLISH NAMES.

⁂

Any honest druggist will tell you that more than half the prescriptions given by physicians are simple remedies, but are written in Latin to mystify their patrons, for which they are in many cases charged exorbitant prices and are kept in ignorance of the effect the medicine will have upon the body. We therefore give the following Latin and English name of all the principal drugs, that you may easily read and understand the doctor's prescription.

Latin.	*English.*
Amygdalus Communis,	Almonds.
Alumen,	Alum.
Ampelopsis Quinquefolia,	American Ivy.
Arnica Montana,	Arnica.
Alpinia Cardamomum,	Cardamom.
Anthemis Nobilis,	Chamomile.
Atropa Belladonna,	Deadly Nightshade.
Aralia Hispida,	Dwarf Elder.
Allium Sativum,	Garlic.
Apocynum Cannabinum,	Indian Hemp.
Arum Triphyllum,	Indian Turnip.
Aqua Calcis,	Lime Water.
Aspidium Filix Mas,	Male Fern.
Althœa Officinalis,	Marshmallow.
Aconite,	Monkshood.
Argenti Nitras,	Nitrate of Silver.
Allium Cepa,	Onion.
Aurantii Cortex,	Orange Peel.
Amygdalus Persica,	Peach.
Aralia Spinosa,	Prickly Elder.
Anagallis Arvensis,	Red Chickweed.

Latin.	*English.*
Aletris Farinosa,	Star Grass.
Acorus Calamus,	Sweet Flag.
Alnus Rubra,	Tag Alder.
Acetum,	Vinegar.
Asarum Canadense,	Wild Ginger.
Artemisia Absinthium,	Wormwood.
Achillea Millefolium,	Yarrow.
Berberis Vulgaris,	Barberry
Barosma Crenata,	Buchu.
Baptisia Tinctoria,	Wild Indigo.
Cimicifuga Racemosa,	Black Cohosh.
Caulophyllum Thalictroides,	Blue Cohosh.
Canella Alba,	Canella.
Carium Carui,	Caraway
Castoreum,	Castor.
Capsicum Annuum,	Cayenne Pepper.
Carbo Ligni,	Charcoal.
Chloroformum,	Chloroform.
Caryophyllus Aromaticus,	Cloves.
Coccus Cacti,	Cochineal.
Cuprum,	Copper.
Cupri Sulphas,	Sulphate of Copper.
Creosotum,	Creosote.
Cubebœ,	Cubebs.
Cornus Florida,	Dogwood.
Cochlearia Armoracia,	Horseradish.
Cetraria Islandica,	Iceland Moss.
Cypripedium Pubescens,	Ladies' Slipper.
Citrus Limonum,	Lemon.
Calx,	Lime.
Calx Chlorinata,	Chloride of Lime.
Colchicum Autumnale,	Meadow Saffron.
Cinchona,	Peruvian Bark.
Conium Maculatum,	Poison Hemlock.
Crocus Sativus,	Saffron.
Cassia Acutifolia,	Senna.
Cantharis Vesicatoria,	Spanish Flies.
Cetaceum,	Spermaceti.
Comptonia Asplenifolia,	Sweet Fern.
Corydalis Formosa,	Turkey Corn.
Chenopodium Anthelminticum	Wormseed.
Cerevisiœ Fermentum,	Yeast.
Cypripedium Pubescens,	Yellow Ladies Slipper.
Digitalis Purpurea,	Foxglove.
Diospyros Virginiana,	Persimmon.
Dioscorea Villosa,	Wild Yam.

Latin.	*English.*
Epigiœa Repens,	Trailing Arbutus.
Fel Bovinum,	Beefs' Galls.
Ferri Citras,	Citrate of Iron.
Ferrum,	Iron.
Ferri Phosphas,	Phosphate of Iron.
Ferri Sulphas,	Sulphate of Iron.
Ferri et Potassœ Tartras,	Tartrate of Iron and Potassa.
Gossypium Herbaceum,	Cotton.
Geranium Maculatum,	Cranesbill.
Gentiana Lutea,	Gentian.
Glycyrrhiza Glabra,	Liquorice.
Gaultheria Procumbens,	Wintergreen.
Hydrargyri Pilulœ,	Blue Pill.
Hydrargyri Chloridum Mite,	Calomel.
Hyoscyamus Uiger,	Henbane.
Humulus Lupulus,	Hops.
Hydrangea Arborescens,	Hydrangea.
Hyssopus Officinales,	Hyssop.
Hepatica Americana,	Liverwort.
Hoematoxylon Campechianum,	Logwood.
Hedroma Pulegioides,	Pennyroyal.
Helianthus Annuus,	Sunflower.
Hamamelis Virginica,	Witch Hazel.
Iris Versacolor,	Blue Flag.
Iodinum,	Iodine.
Ichthyocolla,	Isinglass.
Ipomoea Jalapa,	Jalap.
Juglans Cinerea,	Butternut.
Juniperis Communis,	Juniper.
Juniperus Sabina,	Savin.
Janipha Manihot,	Tapioca.
Kalmia Latifolia,	Mountain Laurel.
Liquor Ammoniœ,	Water of Ammonia.
Liquor Ammoniœ Acetates,	Solution of Acetate of Ammonia.
Lappa Minor,	Burdock.
Linum Usitatissimum,	Flaxseed.
Lactuca Sativa,	Lettuce.
Lobelia Inflata,	Lobelia.
Leonurus Cardiaca,	Motherwort.
Liquor Potassœ,	Solution of Potassa.
Laurus Sassafras,	Sassafras.
Liquidamber Styraciflua,	Sweet Gum.
Liriodendron Tulipifera,	Tulip Tree.
Melissa Officinales,	Balm.
Myrica Cerifera,	Bayberry.
Marubium Vulgare,	Horehound.

Latin.	*English.*
Monarda Punctata,	Horsemint.
Monotropa Uniflora,	Ice-plant.
Magnesia Usia,	Magnesia.
Magnesia Sulphas,	Sulphate of Magnesia.
Myristica Moschata,	Nutmeg.
Mentha Piperita,	Peppermint.
Mentha Viridis,	Spearmint.
Momordica Elaterium,	Wild Cucumber.
Nepeta Cataria,	Catnip.
Nepeta Glechoma,	Ground Ivy.
Nicotiana Tabacum,	Tobacco.
Nymphœa Odorata,	White Pond-Lily.
Oleum Tiglii,	Croton Oil.
Oleum Ricini,	Castor Oil.
Oleum Morrhuœ,	Cod-Liver Oil.
Oleum Terebinthinœ,	Oil of Turpentine.
Oleum Olivœ,	Olive Oil.
Pimpinella Anisum,	Anise.
Populus Candicans,	Balm of Gilead.
Prinos Verticillatus,	Black Alder.
Potassii Iodidum,	Iodide of Potassium.
Plumbum,	Lead.
Podophyllum Peltatum,	Mandrake.
Potassœ Nitras,	Nitre.
Petroselinum Sativum,	Parsley.
Plantago Major,	Plantain.
Phytobacca Decandra,	Poke.
Potassœ Bicarbonas,	Bicarbonate of Potassa.
Potassii Bromidum,	Bromide of Potassium.
Picrœna Excelsa,	Quassia.
Polygala Senega,	Seneka.
Pix Liquida,	Tar.
Polygonum Punctatum,	Water Pepper.
Prunus Virginiana,	Wild Cherry.
Petrolatum,	Vaseline.
Rubus Villosus,	Blackberry.
Rhamnus Catharticus,	Buckthorn.
Rhus Toxicodendron,	Poison Oak.
Rosa Gallica,	Red Rose.
Rheum Palmatum,	Rhubarb.
Rosemarinus Officinales,	Rosemary.
Ruta Graveolens,	Rue.
Rhus Glabrum,	Sumach.
Rumex Crispus,	Yellow Dock.
Sal Ammoniac,	Muriate of Ammonia.
Solanum Dulcamara,	Bittersweet.

Latin.	*English.*
Sanguinaria Canadensis,	Bloodroot.
Sambucus Canadensis,	Elder.
Saccharum Alba,	Sugar, white.
Sodæ Chloridum,	Salt.
Solidago Rigida,	Hardleaf Goldenrod.
Sempervivum Tectorum,	Houseleek.
Senecio Aureus,	Liferoot.
Statice Caroliniana,	Marshrosemary.
Spiritus Aetheris Nitrici,	Sweet Spirits of Nitre
Strychnos Nux Vomica,	Nux Vomica.
Spigelia Marilandica,	Pink-Root.
Stillingia Sylvatica,	Queens-Root.
Salvia Officinales,	Sage.
Smilax Officinales,	Sarsaparilla.
Scutellaria Lateriflora,	Skullcap.
Symplocarpus Fœtidus,	Skunk Cabbage.
Sapo,	Soap.
Sodœ Bicarbonas,	Bicarbonate of Soda.
Sodœ Boras,	Borate of Soda.
Sodœ Sulphis,	Sulphite of Soda.
Spongia,	Sponge.
Secale Cornutum,	Spurred Rye.
Scilla Maritima,	Squill.
Styrax Officinale,	Storax.
Salix Alba,	Willow.
Trillium Pendulum,	Bethroot.
Tussilago Farfara,	Coltsfoot.
Taraxacum Dens Leonis,	Dandelion.
Trifolium Pratense,	Red Clover.
Tela Araneœ,	Spider's Web.
Tanacetum Vulgare,	Tansy.
Uva Ursi,	Bearberry.
Ulmus Fulva,	Slippery Elm.
Veratrum Viride,	American Hellebore.
Viburnum Opulus,	High Cranberry.
Verbascum Thapsus,	Mullein.
Valeriana Officinales,	Valerian.
Veratrum Album,	White Hellebore.
Xanthoxylum Fraxineum,	Prickly Ash.
Zinci Chloridum,	Chloride of Zinc.
Zinci Sulphas,	Sulphate of Zinc.
Zingiber Officinale,	Ginger.

SIMPLE HOME REMEDIES

that can be obtained from your own kitchen supplies or purchased for a few cents at any drug store.

For complicated cases of the following complaints, see regular index in back of the book.

CONSTIPATION.

Rhubarb, powdered,	2½ ounces	Nutmeg, Powdered,	2 drachms
Cloves, powdered,	½ ounce	Alcohol,	2 pints
Cinnamon, powdered,	½ ounce	Syrup,	6 pints

Dose, 1 teaspoonful every 2 hours.

DIARRHŒA.

Prepared Chalk,	½ ounce	Gum Arabic, powdered,	2 drachms
White Sugar,	2 drachms	Cinnamon Water,	4 ounces

Water, 4 ounces

Dose, tablespoonful frequently repeated.

DYSPEPSIA.

Rhubarb, fluid extract,	1 ounce	Spirits of Cinnamon,	2 ounces

Water, 1 pint

Dose, 1 ounce twice a day.

EARACHE.

Olive or Sweet Oil,	2 drachms	Laudanum,	1 drachm

Warm five or six drops in a spoon and place in canal of ear.

ECZEMA (*Internal remedy*).

Sulphur,	2 ounces	Cream of Tartar,	½ ounce

Water, 2 cupfuls

Dose, 1 tablespoonful every morning. Reduce for a child.

ECZEMA (*External remedy*).

White Pine Tar,	3 ounces	Hog's Lard,	3 ounces

Mix and apply to parts. Take the internal remedy with this.

GOITRE (*Big Neck*).

Iodide of Potash,	½ ounce	Water,	1 pint

Dose, 1 teaspoonful 3 times a day.

HEART DISEASE (*For relief*).

Lily of the Valley Root,	1 part	Water,	2 parts

Boil. Dose for adult, 1 tablespoonful after meals.

BLOOD POISONING.

Grate a common Garden Beet and apply as a poultice, changing every hour. Said to be a sure cure.

CURE FOR TOBACCO HABIT.

Chew the fresh inner bark of the White Poplar or mix the powdered bark with powdered White Sugar and extract of Licorice and compress into tablets containing 5 grains of the bark. When a desire to smoke or chew comes on, dissolve in the mouth one of the tablets.

SORE THROAT OR QUINSY.

Cayenne Pepper,	1 ounce	Common Salt,	1 drachm
Vinegar,	1 pint	Boiling Water,	1 pint

Use as a gargle.

RING-WORM OF SCALP.

Sweet Gum,	2 ounces	Hog's Lard,	2 ounces

Melt, making an ointment. Apply to affected parts.

SICK HEADACHE.

Fl. ext. Ladies' Slipper,	½ ounce	Fluid extract Skull Cap,	½ ounce
Fluid extract Catnip,	½ ounce	Water,	1 pint

Dose, 1½ teaspoonfuls.

RHEUMATISM.

Vinegar (3 years old),	1 pint	Oil of Mustard,	½ ounce
Oil of Peppermint,	½ ounce	Olive Oil,	1 ounce

Mix in a bottle and apply to affected parts.

NEURALGIA.

Camphor,	6 drachms	Chloroform (fluid),	1 ounce

Olive Oil, 1 ounce

Dissolve camphor in Chloroform and add oil. Apply as a liniment.

MALARIAL FEVER.

Port Wine,	1 quart	Peruvian Bark,	2 ounces

Bottle the above. Dose, 1 teaspoonful after meals. If it causes noise in the ears, reduce dose slightly

HIVES.

Menthol,	1 drachm	Olive Oil,	4 ounces

Mix and apply to allay irritation and itching.

ITCH.

Powdered White Hellebore Root,	1 ounce	Hog's Lard,	4 ounces
		Oil of Lemon,	12 drops

Mix thoroughly. Use as an ointment.

MENSES (*Suppressed*).

Snowball Flowers, dried,	2 ounces	Water,	1 pint

Boil. Dose, cupful each night. Results in a few days.

WETTING THE BED.

10 to 15 drops of Spurred Rye three times a day.

TO DRAW OUT STEEL OR WOOD SPLINTERS IN FLESH.

Salt,	2 teaspoonfuls	Hogs' Lard,	2 teaspoonfuls

Apply where splinter entered flesh. One night is generally enough to draw it out.

SORES ON BABIES.

Oxide of Zinc,	½ ounce	Petroleum Jelly,	½ ounce

Mix and apply to sores.

DROPSY.

Parsley Root,	2 ounces	Squill,	½ ounce
Parsley Seed,	2 ounces	Juniper Berries,	½ ounce
Sub-Carbonate of Iron,	2 ounces	White Mustard Seed,	½ ounce
Horse Radish Root,	1 ounce	Mandrake Root,	½ ounce
Queen of the Meadow,	½ ounce		

Coarsely bruise these articles and put in 3 quarts boiling Cider and expose them for 24 hours to a very gentle heat in a covered earthen vessel. Let the articles stand in the cider. Dose, wineglassful 3 to 4 times a day.

LEUCORRHŒA.

Fluid extract Cranesbill,	½ ounce	Fluid ext. Golden Seal,	½ ounce
Fluid ext. Black Cohosh,	½ ounce	Fluid ext. Witch Hazel,	½ ounce

Water, 1 quart

Use as an injection.

NERVOUS DISEASES (*Tonic for*).

Fluid extract Cinchona,	1 ounce	Fluid extract Velarian,	1 ounce

Essence Cardamon, 2 drachms

Dose, 1 teaspoonful every three hours.

POISONING FROM IVY OR DOG WOOD.

Lobelia. Elm Bark. Weak Lye.

Equal parts of each. Make into a poultice and apply to affected parts.

PILES.

Carbolic Acid,	20 drops	Glycerine,	1 ounce

Apply twice daily, three minutes at a time.

One of the most simple and sure remedies for piles is external application of hot water. If they are very severe, sit in a small tub of very hot water three times a day or apply a soft sponge soaked with as hot water as you can bear. Good results in three days' time.

ULCERS.

Tallow,	½ pound	White Turpentine,	½ pound
Bayberry,	½ pound	Olive Oil,	4 ounces

Melt together and strain. Use as an ointment.

ULCERATED SORE THROAT.

Fluid ext. Golden Seal,	½ ounce	Pulverized Alum,	1 drachm
Fluid ext. Black Cohosh,	½ ounce	Honey,	3 drachms
Fluid ext. Witch Hazel,	½ ounce	Water,	1 pint

Use as a gargle.

WEAKENED STATE OF BOWELS IN DIARRHŒA.

Fluid extract Colombo,	1 drachm	Fluid extract Ginger,	½ drachm
Fluid ext. Rhubarb,	1 drachm	Water,	1 pint

Dose, 1 teaspoonful every hour.

TAPE-WORMS.

Oil of Turpentine,	1 drachm	Simple Syrup,	½ ounce
Mucilage Gum Arabic,	1 drachm	Cinnamon Water,	½ ounce

Mix, to be taken as a draught.

WORMS.

Powdered White Indian Hemp Root,	1 ounce	Powdered Bitter Root,	1 ounce
		Powdered Balmony,	2 ounces
Powdered Mandrake,	1 ounce	Powdered Aloes,	4 scruples

Powdered Pink Root, 1 ounce

Mix thoroughly. A teaspoonful of the powder may be mixed with a gill of Molasses and a teaspoonful of this given to a child every hour or two until it operates. After this give a teaspoonful three times a day for a few days.

AMENORRHŒA.

Fluid extract Savin,	½ drachm	Fluid extract Ginger,	1 drachm

Sulphate of Potassa, 2 drachms

Mix together. Dose, ½ teaspoonful twice a day.

ASTHMA.

Fl. ext. Skunk Cabbage,	1 ounce	Fluid ext. Pleurisy Root,	1 ounce
Fluid extract Lobelia,	1 ounce	Fluid extract Ginger,	1 ounce
Fluid ext. Blood Root,	1 ounce	Water,	1 pint

Alcohol, 3 pints

Dose, 2 to 3 teaspoonfuls twice a day.

BRONCHITIS.

Fluid extract Stillingia,	2 ounces	Fluid ext. Cherry Bark,	2 ounces
Fluid ext. Blood Root,	2 ounces	Balsam of Tolu,	1½ ounces

Simple Syrup, 2½ pints

Dose, 1 to 2 teaspoonfuls three times a day.

BRIGHT'S DISEASE OF KIDNEYS.

Chamomile (German),	1 ounce	Princess Pine,	1 ounce

Juniper Berries, 1 ounce

Boil in 1 quart of water, strain, add 1 pint of Gin. Dose, a wine-glassful 3 times a day.

CHRONIC RHEUMATISM.

Prickly Ash,	1 drachm	Apocynin,	1 drachm
Cimicifugin,	1 drachm	Alcohol (diluted),	1 pint

Dose, 3 teaspoonfuls 3 times a day.

COUGH (*Syrup*).

Thoroughwort,	1 ounce	Horehound,	1 ounce
Slippery Elm,	1 ounce	Snake Root,	1 ounce
Licorice Root,	1 ounce	Flaxseed,	1 ounce

Simmer together in 1 quart of water until well cooked, then add 1 pint of Molasses and ½ pound Loaf Sugar. When cold add ½ ounce Essence of Anice. Dose, 1 tablespoonful 4 times a day.

CHOLERA MORBUS.

Powdered Rhubarb,	½ ounce
Powdered Peppermint Leaves,	½ ounce
Powdered Carbonate of Potassa,	½ ounce

Mix thoroughly. Dose, ½ teaspoonful.

COLDS.

Fluid extract Catnip,	2 ounces	Fluid extract Saffron,	1½ ounces

Dose, 1 teaspoonful every three hours.

Many cures of simple complaints can be made from material on hand in your own household, such as:

	See Page		See Page
Cinnamon	1003	**Kerosene** (Petroleum)	1037
Camphor	1000	**Turpentine**	1033
Salt	1050	**Soap**	1049
Red Pepper	1001	**Pumpkin Seeds**	1043
Cloves	1004	**Rosin**	1044
Oils	1033	**Rhubarb**	1045
Ginger	1012	**Yeast**	1062
Vinegar	1057	**Ammonia**	989
Mustard	1030	**Onion**	1033
Nutmeg	1032		

GARDEN BEET.

IN China the garden beet is used for suppressed or delayed menstruation. It is claimed that it seldom fails. The plant may be used, or the fluid extract (Beatine) can be obtained in good drug stores. See index — Amenorrhea.

Gravel. — The Chinese owe their immunity from suffering and death from this disease to the use of the beet. Gravel, painful and feared by all, is not considered serious in China. See index — Gravel.

SIMPLE HOME REMEDIES

IN

LATIN AND ENGLISH

⁂

ʒ = one drachm = one teaspoonful.
℥ = one ounce = two tablespoonfuls = 8 teaspoonfuls or 4 dessertspoonfuls.
m = one minim = one drop.
gr = one grain = same.

ASTHMA.

℞

Latin.		*English.*	
Potass. Iodidi,	ʒii	Iodide of Potassium,	2 teaspoonfuls
Sodii Bromidi,	ʒiii	Bromide of Sodium,	3 teaspoonfuls
Tr. Belladonnæ,	ʒii	Tincture of Belladonna,	2 teaspoonfuls
Spts. Etheris Compositos,	ʒv	Compound spirits of ether,	5 teaspoonfuls
Syrupus Simplicis,	℥iv	Simple syrup,	8 tablespoonfuls

Sig. One teaspoonful in little water four times a day.

APPENDICITIS.

℞

Morphinæ Sulph.,	gr. ii	Morphine,	2 grains
Tr. Camphoræ,	ʒii	Tincture of Camphor,	2 teaspoonfuls
Syr. Zingiberis,	℥iii	Syrup of Ginger,	6 tablespoonfuls

Sig. Teaspoonful in little water every two hours until pain is relieved.

BARBER'S ITCH.

℞

Icthyolis,	ʒiii	Ichthyol,	3 teaspoonfuls
Sulphuræ,	ʒii	Washed Sulphur,	2 teaspoonfuls
Unguenti Zin. Oxidi,	℥ii	Oxide of Zinc ointment,	2 ounces

Keep parts greased constantly with ointment.

CROUP

Latin		*English*	
Syr. Ipecac	3 drams.	Syrup Ipecac	3 teaspoonfuls
Mel	6 drams.	Honey	3 tablespoonfuls
Aqua	3 oz.	Water	6 tablespoonfuls
Misce.		Mix.	
Sig.: One dram every hour for children.		Dose: One teaspoonful every hour for children.	

Or:

Spt. Aeth. Nitr.	½ oz.	Sweet Spirits of Niter	1 tablespoonful
Syr. Ipecac	½ oz.	Syrup of Ipecac	1 tablespoonful
Syr. Scillæ	2 drams.	Syrup of Squill	2 teaspoonfuls
Syr. Tolu	2 oz.	Syrup of Tolu	4 tablespoonfuls
Misce.		Mix	
Sig.: One dram q, 3 h. for children.		Dose: One teaspoonful in water every three hours for children.	

SORE THROAT OR QUINSY.

Latin		*English*	
Capsicum Annum	1 oz.	Cayenne pepper	1 oz.
Chloride Sodium	1 dram.	Common salt	1 dram.
Acetum	1 pint.	Vinegar	1 pint.
Aqua Bulliens	1 pint.	Boiling water	1 pint.

Use as gargle.

CONSTIPATION.

Rheuma officinali	2½ oz.	Rhubarb	2½ oz.
Caryopyllus aromaticus	½ oz.	Cloves	½ oz.
Cinnamon	½ oz.	Cinnamon	½ oz.
Myristica moschata	2 drams.	Nutmeg	2 drams.
Alcohol	2 pts.	Alcohol	2 pts.
Syrup	6 pts.	Syrup	6 pts.

Dose: Fluid dram every 2 hours.

EAR-ACHE.

Ol olivæ	2 drams.	Olive or sweet oil	2 drams.
Tr opii deod.	1 dram.	Laudanum	1 dram.

Warm five or six drops in spoon and place in canal of ear.

PROPRIETARY AND PATENT MEDICINES.

NOTHING in the world has given rise to so much superstition and blind folly as the following of fanatic leaders in the curing of disease. Since Hippocrates, and even back to Apollo himself, if we may believe old Grecian and Roman tales, quackery in medicine has reigned supreme.

It pleases people to follow up what appears miraculous in life. Results are more important to the minds of many people than the circumstances effecting results; hence, if a person by hook or crook recovers from a disease while using some patent medicine, he ascribes to its employment some specific usefulness, irrespective of the natural course of the malady, or whatever else he may or may not have done.

In this way ancient amulets and modern patent medicines have seemed to cure cancer, leprosy, liver and kidney and other diseases; and in this way enormous fortunes have been made by advertising in gorgeous attire some specific oil or balsam, the apparent defenders of health and strength. Patent medicines are sold to make money, and not to cure the public; their usefulness is generally in inverse ratio to their labels.

There are, however, some good patent medicines. In some cases they will prove just the thing the system needs, but the risk is too great unless recommended by some physician. It is their blind, indiscriminate use that we condemn. Their formula not being known is what makes them dangerous. They usually are made up of some powerful stimulant which makes the patient feel better for a time, and then leaves the system more relaxed than ever, and hurts the nerves or digestion. We will point out a few that are useful.

There is another class of medicines which are put up by the great pharmaceutical houses, which deserve popular use. Their composition being known, there is no secrecy about them. They are prepared in the most scientific manner. These houses have a name to preserve, and have ample means to procure the services of the best chemists, and, using such large quantities of drugs, they can procure the best and most uniform. They do not claim to be cure-alls, but are compounded for special diseases or conditions, which are plainly stated, and are only claimed to be a remedy for such diseases or conditions of the system. They are just what your physician would prescribe. The difficulty is in rightly choosing from the vast number.

Of late there has sprung up a class of houses who make it a custom to imitate any well-known medicine which has proved valuable, and, by selling their imitations cheaper and using some flaring label, palm off these imitations as being just as good. We would advise that they be shunned like the plague. If here is anything that ought to be pure, it is the drugs, stimulants and nourishment that we take as medicine.

While we do not claim to give a list in this chapter of all valuable remedies, we recommend several of the best and most valuable, which have stood the test of use, and can be taken with safety and benefit. Read in the front part of the book a description of your trouble, then turn to the department in this chapter corresponding to it, and choose the remedy. In all cases the directions will be found on the wrapper of the remedy.

Acetozone.—Acetozone is really a crystaline powder but marketed as a fifty per cent mixture to be used in doses of three to five grains dispensed in gelatine capsules for the cure of diseases which are supposed to be propagated by germs, such as **intestinal** and **bladder** troubles.

Adrenalin Chloride.—Adrenalin Chloride is a preparation of the suprarenal gland mixed in certain proportions with substances to cause an increase of blood pressure throughout the body.

Uses.—Its most important uses are in a diluted solution as one to one thousand in the treatment of **hay fever, tonsilar troubles,** troubles of the **throat, eye, pelvis** and in **surgical** operations to control or **prevent bleeding.** In combination with weak solutions of cocaine it can be injected the same as simple cocaine solutions, and in addition to the anæsthesia thus formed it will stimulate the patient by its **action on the heart** and prolong the anæsthetic effect of the cocaine. It is also used in **asthma** and in **hay fever** by subcutaneous injection of five to ten drops of the one to one thousand solution with good results. It may be used in the form of a spray, applied on pads of cotton for local application or simply applied in solution to the body. Its action is supposed principally to be by direct contraction of the muscular coats of the smaller arteries distant from the heart, thus increasing the arterial pressure. It also acts as a direct stimulant on the **heart,** similar to digitalis, and through some stimulation of the nerves that control the blood vessels the pressure is still more increased, causing a slowing of the heart. Animals which were apparently dead from anæsthesia have been brought to life through the effects of adrenalin.

Antiphlogistin is a substance with an earthy base to which several antiseptics and chromatics have been added. The efficiency lies in the withdrawal of water from the inflamed area, together with the constant application of an antiseptic poultice to the affected part. In **pneumonia** used as a poultice it has been claimed to exert a powerful influence and gives relief. *Antithermolin* and several other preparations have a formula quite similar to the above and are said to accomplish the same purpose.

The latest pharmacopœia accepts a preparation which is called *Cataplasm of Kaolin.* This will be made by druggists at a much cheaper price than proprietary compounds, as the formula is furnished to all and consequently is without the stigma of "secret formula." Its action is supposed to be identical with the preparation just described.

Anti-Fat.—Phytoline is used very extensively. Thyroid Tablets of 5 grains each 3 times a day are very effectual.

Anti-Scrofulous.—Iodia, an alterative and tonic; is much used by the best physicians. This is purely a vegetable medicine. It eliminates specific poison from the blood, which is the seat of the disease, and its tonic power gives strength to the system to throw off the disease.

Chapoteant Sol. Iodide Strontium is much used. Is very easily digested, but is rather expensive.

Syrup Trifolium Compound is a harmless remedy; is a vegetable remedy, and, taken a long time, is a very good remedy to purify the blood.

Biliousness.—Garfield Tea and Fig Syrup contain no salicylic acid, minerals or opium. Are purely vegetable remedies, and can be used by infants, children and adults with safety. India Cholagogue is an old remedy of worth.

Therapeutic Effects of Lactic Acid as found in Buttermilk.

During the past two years great interest has been aroused in regard to the beneficial action of lactic acid bacilli or germs which may be introduced into the body by way of the intestinal tract. The famous foreign physician Metchnikoff has increased the interest by his assertions that life might gradually be prolonged beyond the average by the proper use of sour milk. He claims that there are many **germs in the intestines** that when undergoing change during the digestion of food cause toxines or poisons, which decrease resistant powers of the body and shorten life. Owing to the fact that these germs act best in the normal condition of the intestinal tract which is of alkaline reaction he advanced the theory that their development might be diminished if a substance could be administered that would neutralize the alkaline medium and possibly make it acid. Now a certain type of sour milk contains lactic acid which is well borne by the body, and by causing the digesting food to become acid stops the destructive germs from increasing.

The best bacilli for the purpose are obtained from the so-called Bacilli Bulgaricus which has long been used in the preparation of Bulgarian sour milk. These seem far superior to ordinary sour milk, buttermilk or any other lactic acid productions, and they may be found upon the market under different names and in tablet form such as Lactobacillin Tablets, Fairchild's Lactic Bacillary tablets and others These are guaranteed to be developed from the true Bulgarian stock, and have been proved by numerous tests to be far superior in their action to the ordinary lactic acid bacteria which is found in buttermilk.

These tablets may be added to good sweet milk, and undoubtedly in many cases of intestinal fermentation, poorly nourished individuals from deficient digestion, and some types of chronic constipation great improvement noted.

Cod Liver Oil Preparation.—Vinol. The new cod liver preparation without oil represents unusual body-building and strengthening virtue. In all cases where cod liver oil is needed, Vinol will give the best results, for it is immediately assimilated and acceptable to the weakest stomach, and for this reason it is fast superseding old-fashioned cod liver oil and emulsions.

It is guaranteed to contain in a highly concentrated form all the medicinal elements actually taken from fresh cods' livers, with organic iron and other body-building ingredients, in a deliciously palatable and easily digested form, but no oil or grease.

The simplicity of Vinol is its grandest feature, as it is absolutely free from drugs and injurious ingredients. It is not a patent medicine, as everything in it is named on the label. Chester Kent & Co., Boston.

Coughs.—King's Consumption Cure is one of the best cough mixtures. Linonine is composed of flaxseed-oil combined with chloroform, and is good to soften and allay a common hard cough.

Cystogen.—Cystogen is a trade name for preparations with similar action under the names of *urotopin, amenoform and cystamin.* All these remedies are practically limited to fermentation disturbances in the digestive tract, and especially for **bladder trouble** such as **ammonical urine, cystitis, uric acid diseases, gout** and also to prevent development of **typhoid fever germs** and spoil their infectiousness. The dose is eight to fifteen grains well diluted with water three times a day.

Diabetes.—Gluten Flour is the best food and contains only a small amount of starch. In making the bread it should be mixed with a spoon with wheat bran. The hands should never touch the Gluten Flour. No other bread should be eaten, or other starchy foods. If the patient gets tired of Gluten Flour, alternate with Soya Bean Meal.

Digestive Medicines.—Acid Phosphate promotes digestion without injury and thereby relieves the diseases caused by indigestion. It is excellent for acidity of the stomach and is a very pleasant and healthful drink combined with some syrup and soda. There are so many different causes of dyspepsia, it is often necessary to try several remedies. The following are good: *Liquid Lactopeptine*, *Liquid Pancreaticus* more especially for bowel indigestion. The various preparations of pepsin are good.

Disinfectants.—Eucaline is used around the house as a disinfectant during disease, as a preventative from contagion. Diluted it makes a good tooth and mouth wash, a few drops in a tumbler of water. Is good to sweeten bowls and bath tubs. Can be used in the water pan of furnaces to cleanse the air, and in fact where any disinfectant is used.

Female Complaint.—Lydia E. Pinkham's Vegetable Compound is an honest, tried, and true remedy for all those distressing ills peculiar to women. It has made a constant record of cures for more than thirty years. It acts directly and favorably on the female organism, and should be relied upon with confidence by all women who suffer with any derangement of the feminine organism.

Formaldehyde.—Formaldehyde though practically a gas is always dispensed as a liquid. It is used in **surgery** and as a general antiseptic in the cleansing of **wounds** and **abscesses** and for the **disinfection** of **clothing, surgical dressings, bed linen** and **fumigation of houses** after illness. In the latter use, the gas for its penetrating powers is more valuable than the solution. It is of a very cleansing, irritating nature and commonly causes severe symptoms if inhaled in any strength or if contact of its fumes with the eyes is allowed. One-quarter to one-half per cent solution is generally considered strong enough in surgery and in antiseptics about twice that amount is safe. Although some observers have reported it harmless to man it is not recommended to be taken internally. In minute amounts it has been used to preserve beer and other liquids, it being said it can escape detection of taste or smell. Certain medical preparations now well known on the market owe their efficiency to the liberation of formaldehyde when the substances are acted upon in the digestive tract by the juices of the body.

Foods, Invalid and Baby.—Mellin's Food is one of the oldest and best; it needs no cooking. Mixed with milk it contains all that is necessary to nourish the body. It is the best-known baby food and is invaluable for those suffering from nervous prostration or non-assimilation of food. Malted Milk is a good food for all ages but is more particularly adapted for adult invalids. Bartlett's Food is good for nervous children. Robinson's Groats and Barley, intended for children, is a laxative food.

Headaches.—The remedies for headaches are numberless. For immediate relief, Quincetine Headache Powders is one of the best remedies and has the advantage of leaving no unpleasant effects. You can buy in tablet form if you wish.

Hypnotic and Sleep-Producing Medicines.—Bromidia is much used. It is composed of chloral and the bromides. Every fluid dram contains 15 grains each of pure chloral hydrate and purified bro. pot., and one-eighth grain each of gen. imp. ex. cannabis ind. and hyoscyam. In the restlessness and delirium of fevers it is invaluable. It is well to take outdoor exercise and drink a cupful of warm or malted milk just before retiring.

Iron Preparations.—Elixir Three Chlorides is a good blood-maker. Schlotterbeck's Syrup, Phospho-Chloride of Iron is a good preparation of liquid iron and easily digested.

Liquid Beef Preparations.—Beef Peptonoids, Liquid Beef Peptonoids, and Liquid Peptonoids with Creosote, are preparations of beef in a very digestible form, palatable and very nourishing. Bovox, Bovinine and Wyeth's Beef Juice are very nourishing and are valuable for travellers and to take between meals when faint.

Liquid Malts.—Are chiefly serviceable in inability to digest starchy foods, and in convalescence. All of the following are good: Tarrant's and Hoff's Malts, Liquid Bread, Trommer's Malt with Iodides, Trommer's Citrate of Iron and Quinine, and Trommer's Malt with Pepsin.

Liver and Kidney Medicines.—Garfield Tea is a good family medicine, is harmless, contains no minerals and clears the liver and kidneys of effete matter. Buchu and Hyoscyamus Comp. (Tyree's) to soothe an irritable bladder. In kidney troubles consult the best physicians obtainable.

Loss of Nervous Energy and Impotency.—Sterility in both the male and female. The best remedy for loss of energy and impotency is Kola. Nothing can compare with Kola-Koloid. Its use by the negro in Africa has extended all over the world. It is well known that they raise the largest families and their energy in this respect can perhaps be traced to the use of Kola. Theodore Metcalf Co., Boston, Mass.

Modern Medicinal Skin and Toilet Powder.—Comfort Powder heals and prevents all affections of the skin—**chafing, scalding, itching, burns, sunburn, nettle-rash, offensive perspiration,** or any skin soreness. Unequaled after shaving. Comfort Powder Co., Hartford, Conn.

Neuralgia.—Is usually caused by poverty of the blood. Quincetine is one of the best remedies. Its use is not followed by any unpleasant effects.

Painful Menstruation and Vaginal Remedies.—Wine of American Ash, made from the outside back of the White Ash, is much used in the treatment of the various uterine affections,—namely, prolapsus, versions, menstrual irregularities, inflammation, leucorrhœa, etc.,—or Viburnum Capsules.

Pain Medicines.—One of the very best of all opium preparations is Papine and it is efficacious in most cases. Papine is the anodyne or pain-relieving principle of opium, the narcotic and convulsive elements being eliminated. One fluid dram is equal in anodyne power to one-eighth of a grain of morphine.

Phenolphthalen.—This remedy is a so-called **secretory cathartic** which has lately made its appearance and proved so efficacious that a short description is thought worthy of mention. It is of a yellowish white or almost white color, insoluble in water but soluble in alcohol, devoid of taste and odor, and is the most important late addition to our stock of cathartics. It is non-irritant to the kidneys. acts on the circulation in a beneficial manner and is non-poisonous, large-sized doses having accidentally been taken without bad results, It can be used in any condition where a **cathartic** is indicated, and if the patient is active will act in four to six hours, otherwise it should be taken eight to ten hours before a movement is desired. The dose is one to five grains though the average is usually about three grains. As it is usually dispensed in tablets it should be chewed up and swallowed with a little water, when a satisfactory movement of the bowels may be expected in the time above stated.

Plasters.—Their number is legion. Bell-Capsic, Cuticura and Capsicum are all good.

Prostate Gland Diseases.—Sammetto is used largely for these **troubles**, especially for the aged.

Sal Hepatica.—Sal Hepatica is said by its makers to be an efficient saline with laxative and hepatic qualities. It is said to eliminate irritating poisons in the body and act as a solvent of **uric acid** which is supposed to be one of the causes of **rheumatism.** It counteracts an excessive acid in the digestive tract, thus providing digestion to a certain degree, and is of great benefit in the treatment of **rheumatism, gout** and **lithæmia**. It is probably a combination of lithia with sodium phosphate and other phosphatic salts. The dose is one-half to one teaspoonful dissolved in a glassful of water half an hour before each meal when used as a rheumatism remedy. When needed for a **cathartic**, two to three teaspoonfuls dissolved in a large tumblerful of water and taken one hour before breakfast is recommended.

Skin Diseases.—The various preparations of Sarsaparilla are good. Syrup Trifolium Compound is one of the best remedies to **purify the blood.** A cure from this remedy is almost certain to remain so. Sulphur is also good. Hamamelis for an external application is soothing and cooling. It is excellent for reducing inflammation.

Stomach Tonics.—Horsford's Acid Phosphate for indigestion, Tarrant's Seltzer Aperient for acidity and belching of wind. For a strict tonic the following are good: Elixir Calisaya Bark and Bismuth, Elixir Calisaya and Iron, Elixir Calisaya, Bismuth and Pepsin.

Toilet Antiseptic.—Paxtine. A non-alcoholic antiseptic, possessing extraordinary cleansing, healing and germicidal qualities. It **cures nasal catarrh, sore throat, sore eyes, whitens the teeth, cleanses the mouth** and all inflamed and ulcerated conditions, especially those caused by female ills. R. Paxton Co., Boston, Mass.

Vaginal Remedies.—Orange Blossoms are the best for general use. Antiseptic Vaginal Cones and Boro-Glyceride Suppositories are also largely used.

Whooping Cough.—Vapo-Cresoline. Is a liquid to be burned over a night-lamp. It relieves the cough and hastens recovery.

Wounds.—Aristol, Dermatol and Iodoform are used to promote healing.

WHAT TO DO IN CASE OF ACCIDENTS.

What to Do in Case of Fire.

To avoid fire keep your attic and closets clean, as they are seldom properly ventilated, especially in summer. Rags which may be greasy, broken toys, or old clothes, the pockets of which may contain matches, are ripe for spontaneous combustion, which will often take place at a temperature of one hundred and ten degrees Fahrenheit.

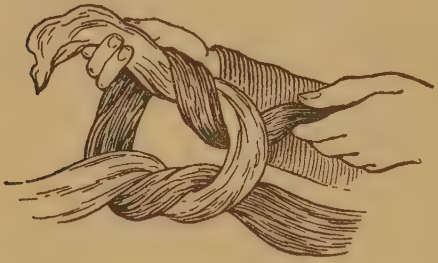
Never allow children to play with matches or throw burnt matches on the floor. If a fire starts, keep your self-control and smother the fire with a rug or blanket or throw water on the material burning, not on the flame. If you find you cannot put it out yourself give an alarm, but in leaving the room to do so, be sure to close the door and windows, for if the room is closed the fire will consume all the oxygen in the room and may die out or burn so slowly that it will give time for the firemen to arrive before it spreads to other rooms.

If awakened by smell of fire at night, don't stop to dress, keep your self-control, wrap a blanket from the bed around you and get out at once, the easiest way you can, closing all doors behind you. Do not go to the floor above the one where the fire is for heat and smoke ascend.

To escape through passages filled with suffocating smoke, tie a wet handkerchief over the mouth and nose, then crawl on the hands and knees, for the smoke rises with the hot air, and will be less dense close to the floor.

Crawling method of escape from passages filled with smoke. Handkerchief holds wet sponge in place.

If the whole of the lower part of the house is burning, and escape by means of the stairs is cut off, preparations must be made for leaving by the window. Tie all sheets and blankets together by means of "reef-knots" (see illustration) which will not slip, no matter how much strain is put upon them. Finally make one end of your improvised fire-escape fast to the bedpost, drop the other end from the window, and after making sure that it reaches to, or almost to the ground, go down it boldly *hand over hand.* There is always considerable risk of a dangerous fall resulting from this means of exit; therefore it should be undertaken only when all other means of escape have failed.



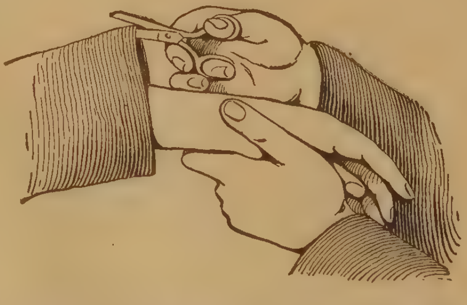
Manner of tying sheets, etc., together to form an escape rope.

In case of an overturned oil-lamp, there is a sudden and alarming blaze; but if the action is taken at once, the damage may be confined to the carpet or cloth on which the lamp actually lies. To throw water on the conflagration is useless. The burning oil will only be forced over a larger area. The aim should be to absorb the oil and smother the flame, and this should be done by means of some non-flammable powder, such as flour, sand or earth from the garden.

A few words may be added respecting the treatment of burns and scalds before the doctor comes. Bear in mind the air is to be excluded from the affected part as quickly as possible. This may be done by dredging the part thickly with flour—if the skin is not broken—and not disturbing it for some time.

Any vegetable oil such as salad, sweet or linseed may be used with advantage; soak a rag with it and use to cover the wound. A very good application is made by mixing equal parts of linseed oil and lime water, forming "carron oil."

All clothing covering a burn must be removed with the utmost care. Never try to withdraw the injured limb, but cut the clothing away (see illustration) so that the injured surface may not be more damaged. Never hold a burn in front of the fire, according to the popular practice; this only increases the injury. Have your oil or other application ready for immediate use as soon as the clothing has been removed.



To avoid drawing burnt or scalded limb from clothing cut apparel away with sharp scissors.

What to Do in Case of Bodily Injury.

Move the patient to a quiet, airy place. Keep bystanders at a distance. Handle the patient gently and quietly. Place him in a comfortable position. Unless the head is injured, have on the same level as the body. Loosen the collar, waist-band and belt.

If the patient vomits turn him on one side with the head low. If bleeding, stop at once. Cover and dress all wounds immediately.

Burns and Scalds.

Carry patient to a place of safety. If severe send for surgeon. Remove clothing from burns. Cover burns to exclude air.

Slight Burns.—Keep the skin moist and cool with frequent applications. Cover with clean gauze cloth or old linen.

Severe Burns.—Remove clothing by cutting away; if clothing sticks around burned part, wet with carron oil. When extensive, dress a little at a time; exclude air by covering surfaces. Never hold a burn to heat. Flush liberally with carron oil, then cover with a layer of absorbent cotton upon which vaseline has been evenly spread and secure it with a light bandage.

If Clothing Catches Fire.—Throw person down, wrap him in rug or shawl, roll him on the floor until flames are extinguished.

Burns from Caustic Lye or Strong Ammonia.—Flood with water, then with vinegar, and then treat as if burned by fire.

Burns from Acid.—Flood with water and wash with solution of baking soda.

Frost-Bite.—Rub frozen part with snow or bits of ice or put into cold bath.

Foreign Bodies in Eye, Nose, Ear and Throat.

Foreign Bodies in Eye.—Do not rub the eye. Do not use a handkerchief. First try to remove with a piece of surgically clean gauze. If not possible to wipe out the substance from the eye, blowing the nostril on the same side is often effective.

Whether you get the substance out or not, drop into the eye a few drops of boracic acid, three per cent solution, close eyelid, and bathe surrounding parts liberally with boracic acid. If inflammation or pain is severe, apply pad of absorbent cotton saturated with boracic acid and bandage with clean, soft cloth. If body is under lid, put lid up.

Foreign Body in Nose.—Blow the nose hard, holding opposite nostril. Excite sneezing. Have patient take a full breath, then give a sharp blow on the back between the shoulders.

Foreign Bodies in the Ear.—For immediate relief put a few drops of warm oil into the ear.

Foreign Bodies in Throat.—Send for surgeon. Make patient cough by slapping him on the back, bend him forward, face downward.

Machinery and Railroad Accidents.

In all cases send for the nearest surgeon; attempt very little yourself. Flush the wound with an antiseptic, then cover it with medicated gauze or similar dressing and wrap in bandage. If splint is required, apply splint after wound is covered.

Bruises or Fractured Bones.—Apply cloths saturated with an antiseptic and keep the body warm. Give hot tea, coffee or milk.

Crushed Fingers or Toes.—Mold into natural shape with light touch. Do not handle them with your bare fingers; cover your fingers with gauze or clean cloth.

Crushed Hands or Feet.—Do not attempt much. Tie injured part loosely in surgically clean cloth. Send for surgeon at once.

Crushed Arms or Legs.—Lay patient down, cut away clothing, do not move part. Wrap with clean gauze. Wrap several sheets of absorbent cotton over this; bandage over all to hold dressing firm.

Crushed Chest or Lower Part of Body.—Dress any wounds with clean gauze and apply warmth until surgeon arrives.

Electricity Accidents.

If you can, shut off current as quickly as possible. Release injured person from contact with wire. Be careful to protect yourself from shock. In releasing patient do not touch wire or any part of the patient directly. Don't touch with bare hands; don't use anything made of metal; don't use a moist stick.

If rubber boots and rubber gloves are at hand, stop and put them on; you will save time in the end. If not, try to find dry paper or dry board to stand on before touching patient.

Covering hands with dry paper is wise. If wire is lying on top of patient, flip it off with a stick. If wire is under patient, and you have to lift him, do not grasp or touch his body; take hold only of his clothes. In electric shock patient is generally insensible. Lay him down, loosen clothing. If breathing is suspended, use artificial respiration. Burns caused by electric shock can be treated just as burns from fire.

Artificial Respiration.

USEFUL IN DROWNING, ELECTRICITY ACCIDENTS, SUFFOCATION, etc.

First try tickling the throat with a straw or feather. If tickling the throat fails, try artificial respiration. (See Illustrations, p. 1146H.)

Artificial Respiration.—Remove coat and shirt. Turn patient on his back with coat rolled up under shoulders. Let head drop backward. Pull out his tongue, and keep it out by tying it to lower jaw. This may be done with a handkerchief crossed under chin and tied back of neck; or else thrust a long pin through the tongue, being sure it is long enough to rest against the teeth and keep the tongue out.

Kneel at his head, grasp his arms just below the elbows, draw his arms outward, then upward to sides of head. This expands the chest. Bring his arms down along his sides in front of chest, and press inward on chest firmly. This drives air out of lungs. Alternate these movements slowly about fifteen times per minute. Continue for at least one hour. Apply ammonia or smelling salts to the nostrils at intervals.

Do not be easily discouraged. Life has sometimes been restored only after several hours' work. When breathing is restored, wrap in blankets. Rub whole body briskly, rubbing toward the heart. Give stimulants, though very cautiously.

Drowning.

How to Save a Drowning Person.—Swim up cautiously; do not let him seize you. Grasp him by the hair. Swim on your back, resting his head on your chest, and tow him along.

Clearing the Throat.—Clear the air passages of water. To do this lay patient face downward, over a barrel or log, or else clasp your hands under his belly and raise him. Follow with artificial respiration.

Suffocation.

Suffocation from Poisonous Gases.—Remove patient to open air or open all windows. Dash cold water on face and chest. If necessary use artificial respiration. Apply hot-water bottles to body and put mustard plasters to heart, soles of feet and wrists.

Hanging.—Cut or take down the body and treat as in suffocation.

Broken Bones—Fractures.

MAKE patient comfortable; put limb in splints before attempting to move the patient. Simple fractures are those where the bone is broken but does not protrude. Compound fractures are those where the broken bone sticks out through the flesh, making a wound.

For simple fractures nothing but putting the limb in splints is necessary. For compound fractures, first bind up the wound and stop bleeding. Then put limb in splints. In all fractures remove clothing from the injured part. Always handle the fractured limb delicately.

Lay injured limb upon splints well cushioned; bandage splints firmly so that fragments of bone will not move on each other. If fracture is compound—*i.e.*, accompanied by a wound—flush with an antiseptic and put gauze next to the wound, cover with an absorbent cotton pad, then with bandage, and put limb in splints as in simple fracture. In all fracture cases after splinting carry the patient to a physician on a stretcher, not in the arms.

Splints.—Splints can be improvised from any handy material, and should be longer than the injured limb and always well padded. In splinting have two splints, one on each side of the limb; one bandage will hold both.

For padding, absorbent cotton is the best material. For binding, use triangular bandage. To improvise padding, use grass, straw, soft cloth or soft garment. To improvise bandages, use handkerchiefs, towels, garters, cords, suspenders and straps.

Dislocation.

DON'T attempt to set dislocated parts. Send for the surgeon. Place part in position easiest to sufferer. Apply wet cloths.

Sprains.

THE most important thing is absolute rest. Handle a sprain as little as possible.

Ankle Sprains.—Place folded towel or cloth around the part and cover with bandage.

Foot Sprains.—Immerse foot in water as hot as can be borne. In both ankle and foot sprains elevate the foot.

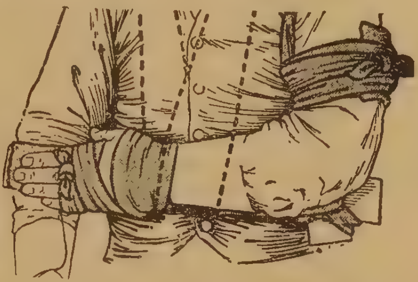
Wrist Sprains.—Apply a padded splint and put the arm in a sling.

Fractures of Arms, Legs &c.

Of Upper Arm.—No splints are required. Tie arms to side with wide bandage.

Of Lower Arm.—Tie arm in splints and place in a sling.

Fracture of Forearm.

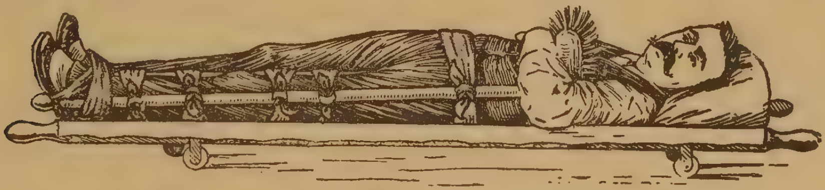


Lathes used as emergency splint for fracture at elbow joint.

Of Collar Bone.—Can be recognized by drooping of the shoulder affected. Support elbow and upper arm to relieve weight from injured point. Lay patient flat on back; no pillow. Keep him so until the physician comes. Don't attempt to set the bone.

Of Shoulder Blade.—Put arm in large sling, then bandage arm to side.

Of Ribs.—Lay person on his uninjured side or on back with head and chest elevated. Wrap around chest several times with cotton bandages. If surgeon cannot be reached, wrap whole chest in adhesive plaster.



Emergency splint made with broom for broken leg.

Of Thigh.—Lay the patient flat on back or a little inclined to injured side; head and shoulders slightly raised. Draw limb out straight. Prepare the splint long enough to reach from waist to ankle; pad well. Bandage limb to splint by bandage above the break and below the break, around the knee, around the ankle and around the waist. Bandage in more than two places. If carrying the patient is necessary, bandage injured limb and sound one together.

Fracture of Leg-bone.

Of Kneepan.—Prepare splint large enough to reach from foot to thigh. Lay patient on back; straighten out injured leg. Place it on splints. Under the knee place a pad three inches thick. Place a similar pad back of heel. Bind splint at ankle and thigh, also below and above knee.

Of Lower Leg.—Lay patient on back; pull injured leg down straight and cover with gauze; bandage loosely. Lay injured leg on cushion; draw sides of cushion up around leg and bandage firmly. If cushion is firm no splints are required.

Of Fingers and Toes.—Bind up with splints. Be sure that splint is long enough to keep injured member stationary.

Of Bones of Foot.—Make a triangular splint of two sticks nailed at right angles. Bind firmly to leg, then to foot.

Bleeding.

From Slight Wounds.—Flush with cold water and cover with surgically clean cotton or gauze. Bandage firmly.

From Veins.—Blood is dark red, flows freely from the wound and does not spurt. Lay patient down. Loosen tight clothing, garters or straps. Elevate wounded part. If severe, press on wound with hard pad of clean gauze or cotton. Apply cold by means of ice. If this does not stop bleeding, apply tight bandages near wound, but on side furthest from heart. In stopping bleeding by pressure, remember that flow of blood in veins is toward the heart; in arteries from the heart.

From Arteries.—Blood bright red color, comes in spurts. There is great danger. Act quickly. Send for surgeon. Lay patient down, cut away clothing and expose wounds. Elevate wounded limb. Apply pressure immediately, by thumb and finger covered with surgical gauze or a clean towel. Replace this by crowding gauze into wound and hold it with tight bandage.

If bleeding does not stop, compress arteries with tight bandage near wound, but between heart and wound. If artery passes over bone, press there with hands. If not, use tight bandage. When bleeding is stopped give warm drinks of tea, coffee or milk. After bleeding has been stopped cover the wound at once with surgically clean gauze or absorbent cotton and bandage. A soiled covering is worse than none at all and may cause blood poisoning.

Fainting from Bleeding.—Lay the patient on the floor or couch, lower the head, keep the limbs elevated; apply warmth. Bleeding will start again when consciousness is restored. In bleeding from the socket of a tooth, pack with plaster of Paris.

Nose Bleed.—Lay patient on back, raising arms above head. Apply ice or cold water to forehead, nose and back of neck. Let patient snuff cold water. Stuff gauze or cotton into nostrils. The nose must not be blown for several hours.

Bleeding from Lungs.—Place patient on floor in a sitting posture. Give small pieces of cracked ice. Also small portions of salt mixed with vinegar. Place cold wet cloths on chest or stomach. (See page 658.)

Wounds.

First Aid to Wounded.—Lay the patient in a comfortable position. Stop bleeding. A vital point is to cover the wound as quickly as possible; but before doing so saturate with equal parts of alcohol and water. This will cleanse the wound and prevent the entrance of contamination through contact with the clothing and other substances, and is the procedure which has been followed in gunshot and other wounds on the field of battle in modern wars and which has given excellent results.

The chief point is that the materials used to cover the wound must be absolutely clean; that is, surgically clean. It is safer as a rule to temporarily bind up the wound, dirt and all, than to touch it with unclean hands. Dirt, bits of glass or clothing, splinters of wood, fish-hooks, pins or thorns should be picked out with tweezers or pincers. Grease, soot and dirt from machinery may be wiped out with surgically clean gauze. Do not mop a wound, but it may be flushed with the alcohol and water, allowing this to trickle over the wound. Never attempt to stitch a wound—leave that for the surgeon.

Do not apply adhesive plaster except over small wounds. Wounds are best drawn together by a surgically clean ribbon bandage, and over this a covering. In pierced or punctured wounds caused by bayonets, swords, etc., in war, and by needles, fish-hooks, bits of glass, splinters and other ordinary articles, remove the article causing the wound. If a portion has broken off, let a surgeon remove it. Fish-hooks should be pushed through, not drawn backward.

Wound Dressing Hints.

Send for a surgeon. Do not touch the wound with the hands. Arrest bleeding. Do not disturb blood clots. Remove foreign substances when it can be easily done. Never probe for a bullet. Bring the edges of the wound together. Cover the wound as quickly as possible. Keep the part quiet with a sling or splint. Rest is essential to the healing of wounds.

Poisoned Wounds.

Snake Bite.—Don't stop to kill snake. Tear open clothing and expose wound quickly. Bandage limb tightly to stop circulation partly. Open the holes made by the snake's fangs with a sharp knife. Cut outward and lengthwise of the limb. Let the blood run from the knife-cut. Sucking the wound answers the same purpose, but less effectively. Wash wound. Get patient to surgeon as soon as possible. Keep the pressure applied.

Bites of Dogs, Cats, etc.—First wash and apply hartshorn. If the animal has been sick, suck the wound after cleaning.

Sting of Centipedes, Tarantulas, etc.—Apply hartshorn or table salt and consult a surgeon.

Shock.

Severe shock shows in the coldness of the body, feeble pulse, half-closed eyelids, sometimes insensibility. Send for a surgeon at once. Keep patient warm with blankets or coats, whether winter or summer. Apply hot-water bottles. Apply mustard plasters to the soles of feet and to the wrists. Rub the arms and legs. If conscious, give warm drinks of tea, coffee or milk.

Dressing of Wounds.

The greatest danger to wounds results from contamination with foreign substances. Certain invisible irritating matters (so-called disease germs) quickly find lodgment in the wound by transference from the air, the clothing, skin, in fact, from anything that may come in contact with it. In consequence of such contamination blood poisoning, gangrene, inflammation, fever, erysipelas, lockjaw or tetanus and a train of other complications are liable to follow any wound. Even scratches and pricks, when not properly cared for, may result in inflammation and the formation of gatherings or abscesses, which will disable a person for a considerable time or cause the loss of a limb, or may even cost his life. For this reason the modern practice of surgery demands that the dressings to be applied to a wound should not only look clean, but actually be clean surgically and free from infection. In the eyes of a skilled surgeon a piece of spotless linen may be actually a filthy rag.

Transportation of Injured.

If no stretcher or ambulance is at hand, one may be improvised by turning the sleeves of a coat inside out, passing poles through them and buttoning the coat; a long stretcher may be constructed with two coats. A broad board or shutter covered with straw or clothing will provide a usable stretcher.

Always test a stretcher before placing a patient upon it. Do not carry a stretcher upon the shoulders except when going up hill and up stairs. Avoid lifting over walls, hedges and ditches; keep level. If a chair is used in carrying, carry the patient back forward.

Bandages.

Gauze Roller Bandages are made from cloth specially woven for the purpose and can be obtained at any drug store.

These bandages are very absorbent, soft, and at the same time firm and strong. They are intended to be used as a direct covering for the wound, and where their absorbency is useful to hold and retain wound discharges. They are also useful in binding and holding other dressings and for the application of solutions, lotions, etc., to the wound. The gauze bandages are wrapped separately, thoroughly sterilized and sealed. They can be applied without danger of infection.

Where a stronger bandage is required, or one for an outer covering, either the ribbon roller bandage or the triangular bandage should be applied.

Cotton Roller Bandages.—These are ribbon like strips of cotton cloth, wound into a roll-like tape. They are strong and may therefore be used for binding up injuries in all parts of the body. (See page 674.)

Miscellaneous.

Sunstroke.—Remove to shady place. Lay patient down, head level with body, and loosen tight clothing. Pour cold water over head and face. Rub body with pieces of ice. In prostration from sunstroke apply heat to extremities.

Fainting.—Lay patient flat and loosen tight clothing around neck, chest and waist. Allow free access of air. Bathe hands and face with cold water. When conscious give tea or coffee.

Fits.—Kneel by patient's head, put one arm under his head and with the other undo collar. Place the handle of a penknife or any hard substance in a handkerchief and put between the teeth to prevent biting the tongue. Do not restrain his movements. Do not give anything to drink.

Unconsciousness.—Lay patient flat, head slightly raised. Apply cold water to head. Keep body warm. Apply hot-water bottles to soles of feet. Give no stimulants.

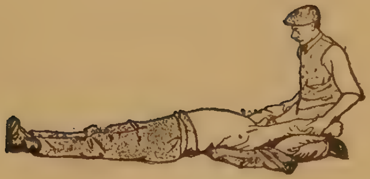
Concussion or Stunning.—Proceed as in fainting.

Hysteria.—Do not restrain patient nor sympathize with him in any way. In many cases the patient will recover best if left entirely alone. Mustard plasters may be applied to soles of feet, wrists and palms of hands.

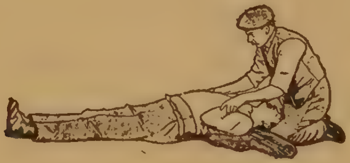
Artificial Respiration.

Electricity Accidents.

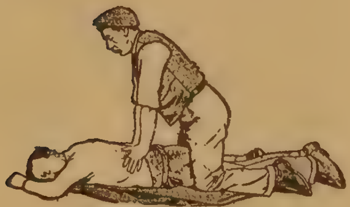
See pages 1146 and 1146A.



Inspiration.



Expiration.



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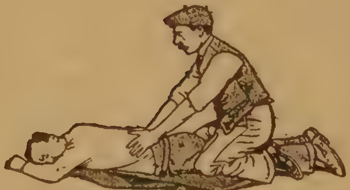


Inspiration.

Toad-Stools. — Evacuate stomach with mustard water, then Epsom Salts; stimulate.

Rat Poison. — Give mustard and salt, teaspoonful of each in water, then flaxseed tea freely.

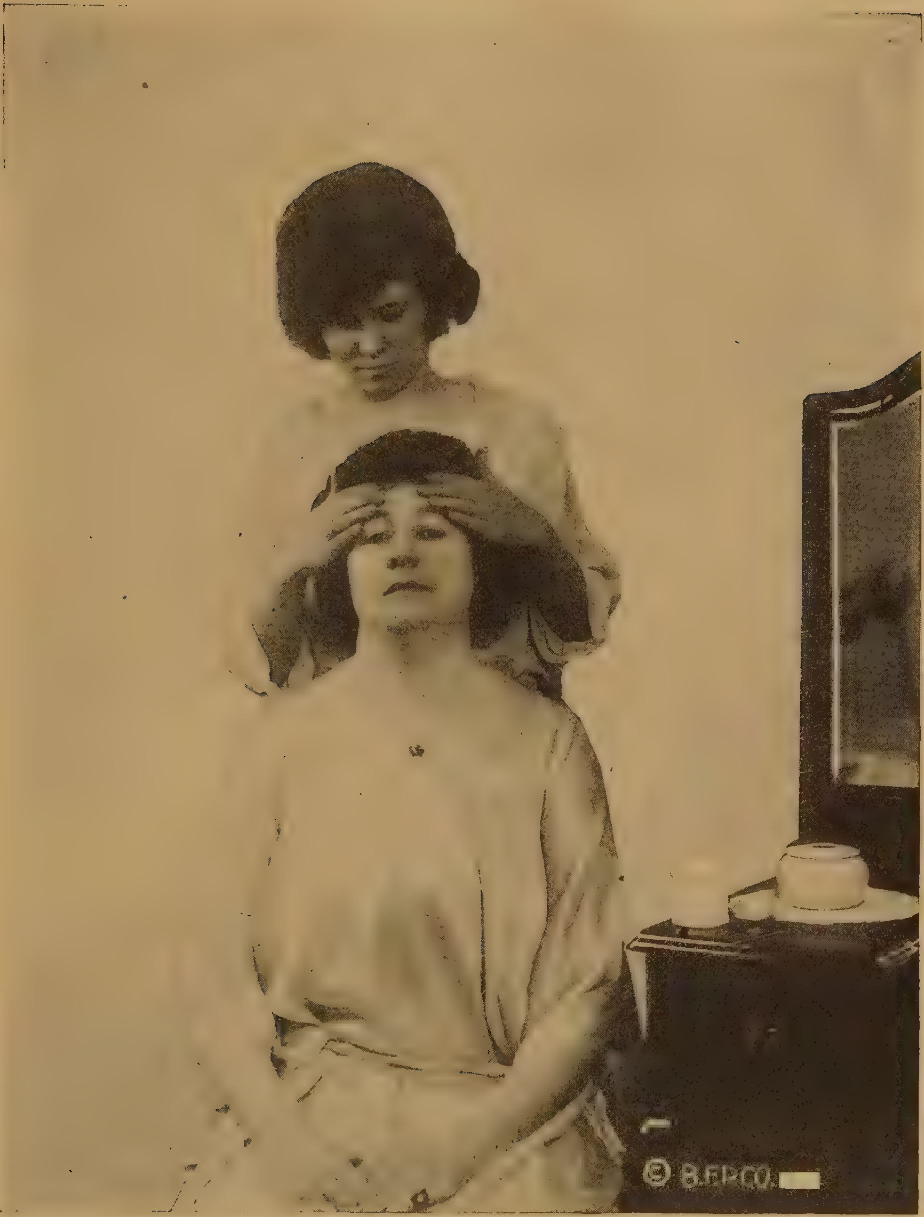
Dog or Mad Dog Bites. — Tie band tightly above wound; cut out and cauterize wound; apply antiseptic dressing; give purgative and warm drinks; send to Pasteur Institute.

Strangulation; same as Hanging. — Page 563.

Phosphorus (or Matches). — Give mustard water, then milk and magnesia; follow with flaxseed tea freely.

Paris Green; same as Arsenic. — Page 565.

Carbolic Acid.— Give flour and water — call physician.



No. 1
Massaging the Forehead.

THE WOMAN BEAUTIFUL

A TREATISE ON HOW TO KEEP YOUNG

By AUGUSTA PRESCOTT

It was a wise old philosopher who said to his daughter: "Keep young, my child, and you will keep beautiful." To this he might have added, "Keep healthy and you will keep young."

Youth, health and beauty are the three qualities sought by womankind. Perhaps in the triple quest, beauty stands first, but it is hard to think of beauty without roses and of roses without youth.

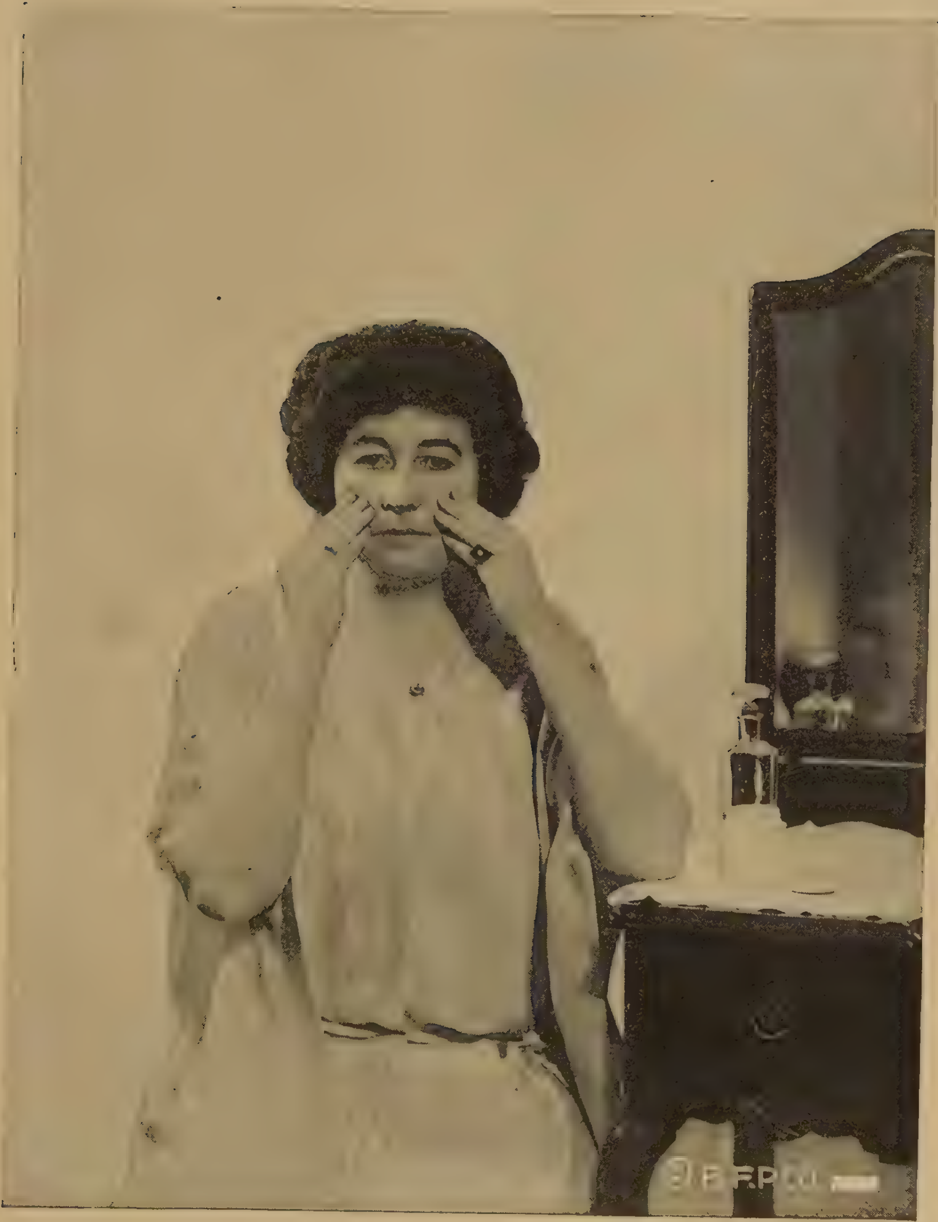
Keep healthy and you will keep young. You can cheat Father Time and actually hold him at bay. Follow this beauty quest patiently and faithfully, and you will keep so young that none but the family Bible can testify how old you are.

A French writer of the days of Louis XI said: "Make beauty a virtue; strive for it; work for it steadily; keep at the beauty contest unceasingly; and do not give up ever—even though the task looks long and apparently hopeless."

The first fault of the woman who is growing in years is the figure. It grows heavy and becomes the middle-aged figure. She sleeps a little longer in the morning; is a little more tired during the day; eats more than she used to; goes to bed earlier, and is less careful of her appearance.

And this is what happens: She grows fat, her chin doubles; her abdomen creeps up; her belt line is too high and too big; her limbs become awkward; and her figure is bulky. She has passed from youth into middle age, but really there is no excuse for this,—it is simply carelessness and neglect of the charms Nature has given her; it is for the want of supplying her skin and muscles with fresh warm blood by proper and careful exercises—which, if followed out for fifteen minutes twice a day, should keep, restore and insure beauty of face and figure.

The woman who is beginning to look old, and the young woman who wants to keep her good looks, should both learn that youth and beauty depend principally upon eight things, all of which are extremely important.



No. 2
Massaging the Face.

The figure: A woman should be neither too fat nor too thin, and in this connection it may be remarked that flesh is easily controlled.

The complexion: Should be smooth and clear.

The mouth, includes the care of two rows of shining teeth.

The eyes: Should be bright, shaded with good lashes and outlined with nice even brows.

The cheeks govern the shape of the face, and should be full and dimpled.

The throat should be just slender enough to support the head like a column; a thick, heavy throat is an abomination, and a double chin is a sure sign of age.

The hands should be tapering, white, well shaped and crowned with ten rosy nails.

The hair, which is woman's crowning glory, should be kept natural, thick and becomingly dressed.

We might add other points of beauty, but these are enough for the average woman.

For the woman who is in fair form and wishes to remain so, should take the following exercises twice a day, clad in a loose suit for gymnasium work, and once a day before exercising take a tepid bath made brisk with aromatic vinegar.

First. The first lesson, and most important, is walking correctly. Put the body in the correct position, walk slowly with head erect, shoulders back, lungs full of air, chin high and far back, abdomen in, and hands at sides. In this position bend the body forward at the belt line; take long steps and turn the feet outward. This will give you the fashionable carriage which is both feminine and pretty. This exercise should be practised for at least ten minutes daily.

Second. With a wand in your hand, mount a footstool.

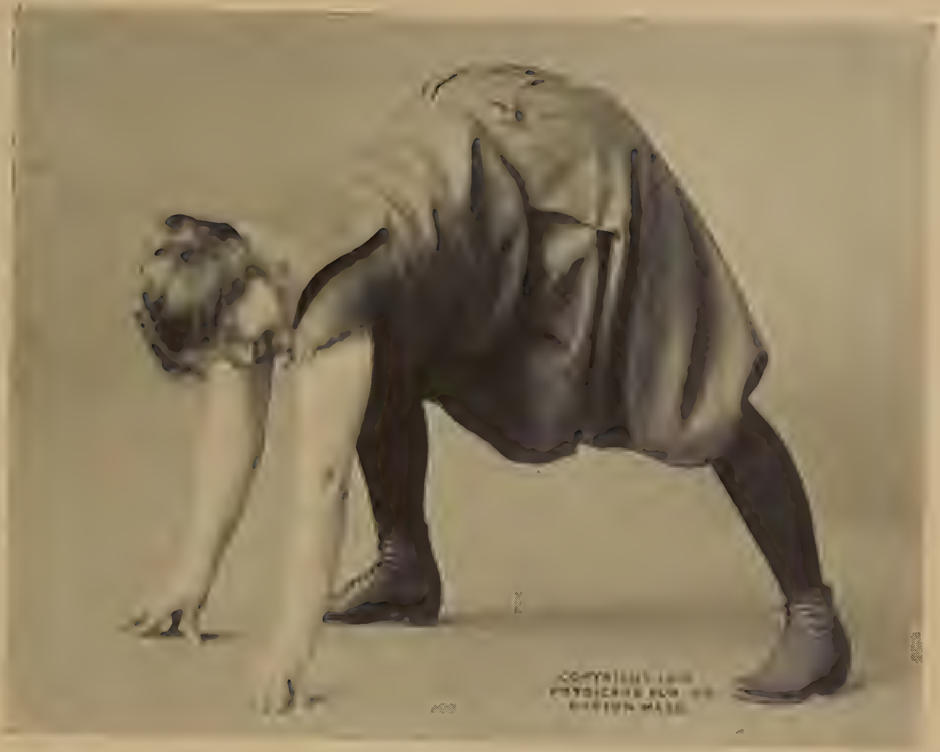
This exercise consists in balancing, first on one foot, then upon the other, at the same time raising and lowering the wand high above the head.

Third. The bending exercises must be taken up cautiously. Women who are delicate should not bend more than two or three times at a lesson. The exercises consist of walking or running around the room on all fours and bending backward until the hands almost touch the floor if possible, if not, as far as you can; of bending forward until the palms of the hands lay flat upon the carpet, and of swaying far to one side, then to the other.

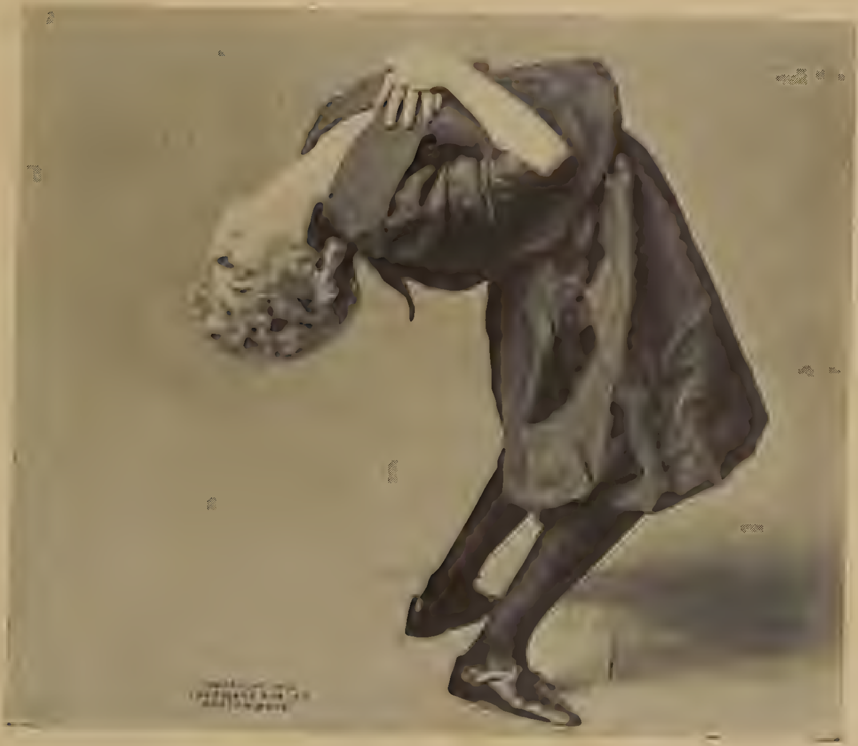
These exercises are enough for the average woman, and if practised faithfully twice each day together with the bath, will prevent superfluous flesh, and make the skin fresh and the muscles supple, strong and capable of their natural beauty and functions.

For the stout and middle-aged woman we recommend the dumb-bell exercise (See page 1175).

The dumb-bells should be of wood of the lightest make. This exercise, together with the bath, will surely reduce the form to its



Good exercise for stout women.



A severe exercise for strengthening the back.

natural size, bringing the muscles back to their natural position.

The bath for a stout woman should be as cool as she can comfortably take. If her heart is weak—as of course it is—she should not take an ice bath, but a bath of cool water made spicy with bath vinegar.

For water of the right temperature for a stout woman it is well to draw it the night before on retiring and let it stand until morning. It will then be the same temperature of the room, to which should be added the bath perfume or bath vinegar.

An excellent bath perfume can be made by taking a pint of spirits of cologne, into this put half an ounce of oil of rose geranium, add one grain of musk and let stand for two weeks. Pour all into a two quart bottle and fill up with the very best alcohol. This should last about six months, and costs about a dollar. Use a small cupful to a bath.

There is a Frenchwoman making her fortune selling a bath vinegar to the British aristocracy. Here is her secret, it is not expensive:

Procure a large rose jar, fill with dried rose petals, also dried green leaves of the rose, the leaves of dried clover, sweet grasses broken into bits and red clover heads gathered in season. Spice the leaves with cloves, salt, and a few drops of oil of rose geranium, and stir thoroughly with the hand or a long stick. The contents of the jar is called Preserved Aromatic Leaves and is the foundation of the bath vinegar.

The bath vinegar is made as follows:—

Into a gallon jug put a quart of pure red wine vinegar, into this put a cup of Preserved Aromatic Leaves (prepared as above), cover the whole closely; at the end of three days strain off the vinegar and add a pint of pure alcohol. Then bottle. This makes a very invigorating mixture; one that wakens the skin and keeps it young.

Another bath vinegar is made by adding a quart of strawberries to a quart of red wine vinegar. Let stand for three days, then strain and bottle for the bath. A cup in a tub of water makes a complexion bath.

A rose-leaf pillow made from the contents of the Preserved Aromatic Leaves is good for headache.

A long bolster-like pad filled with the same leaves will quiet aching nerves, if a hot-water bag is laid upon the pillow to bring out the scent.

For perfuming the house nothing can equal the beneficial effects of a rose jar of Preserved Aromatic Leaves, stirred in the lower hall every morning.

One of Queen Victoria's physicians advised her to perfume her house daily. Her Majesty had a horror of contagious diseases. "Stir a rose jar every day in the hallway," advised the doctor, "and you will keep away germs, insects and disease microbes, for such pests will not enter when the room is filled with sweet scents."

The extent of the beneficial effects of sweet scents upon the nerves is wonderful. The ancients, when ill, burned sweet spices, and the Bible says in olden times they treated the sick with sweet scents. In the hospitals of the large Oriental cities the nurses scatter a perfume about daily. Your physician will tell you that very sensitive women absolutely revive if given a whiff of violet. Violets are for the nerves, rose for the spirits, and Spanish scents and pinks for the head.

The nervous woman should take a little ammonia and scent it with violet for the best results to her nerves.

The restless woman is positively soothed by a bottle of fine perfume, and should consider it a necessity instead of a luxury. It should be a household remedy, kept in great bottles, home made and in constant use.

The Complexion, or Care of the Skin.

DIETING has its effects not only upon the figure but upon the skin. There was once a time when dieting meant going without food, and many a woman after two or three days of hunger gave it up as a very bad bargain. "I'd rather be fat," she said, "I don't like to starve to death, I cannot diet." Now, in the light of recent science, dieting does not mean being hungry. It means eating all you want, but of food that agrees with you. The complexion, the spirits, the eyes, the liver, so much that is essential to the woman beautiful, depend upon the kind of food you eat. You can utterly destroy your beauty with the wrong kind of food.

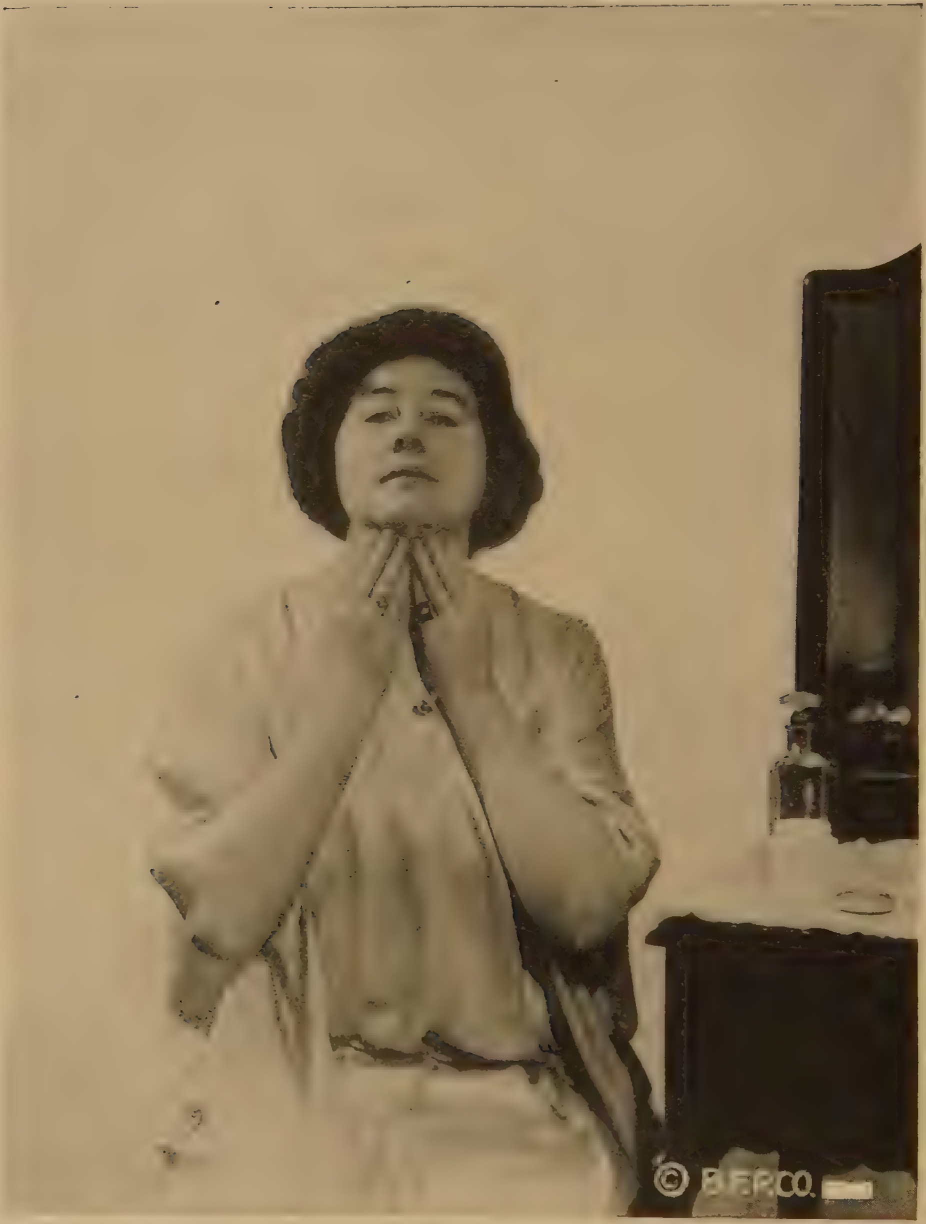
The gifted Kipling declares he could tell by their "pastry skins" the women who live on pie. He said bad skins lived in the great pie belt of America. Yet Kipling was wrong. Pie, well baked and eaten warm, is good food. Hot pie, hot bread, hot foods of any kind are bad. They hold the heat too long in the stomach and, while lying there waiting to cool, it irritates the lining of the stomach. A very hot biscuit holds its heat a long time, long enough to injure the strongest stomach, but a moderately warm biscuit is good food.

Salt food is bad for the complexion. It holds the digestion back. Salt preserves food and very salt meat is retained in the stomach too long. It upsets the digestion and injures the skin.

Sweets and sours are good for the complexion, but they should be taken at the right time.

The society woman who is dependent upon her beauty for her "belledom" is always dieting. Her best diet is the milk diet. For a week twice a year she takes nothing but milk. New York society women usually go upon this milk diet during Lent, as being the most convenient time, and for a week they take nothing into the system but milk.

The dose for the milk diet as laid down by King Edward's physician



No. 3
Massage for Removing Double-chin.

at a famous country health cure is: "Take a glass of milk upon rising. Then follow it with a glass every hour all day. Add a pinch of salt if you prefer. Drink water between the glasses of milk. The milk will wash all impurities out of the system." Milk thus taken is not very fattening.

Women who are not very strong and who do not like the milk diet, and women who are very hungry, as well as women whose complexions are not very good, and want to improve them, can adopt a betwixt and between diet, which will do for every day in the year, the whole year around. It is called the complexion diet, and is used all the world over.

The Complexion Diet.

In the morning on rising take a glass of cool water. Drink another glass when sitting down to breakfast. Let the breakfast consist of fruit if you like; if so, take no cream on your fruit.

The union of acid and cream will cause a sour stomach and a poor skin. Baked apples are good, but do not eat baked apples and cream. The same can be said of strawberries and cream. For breakfast eat all the toast you want, eat one lamb chop if you like, and one small cup of coffee, but do not drink anything else with your meal.

At noon (if you dine in the middle of the day) take soup, meat, baked potatoes, spinach or asparagus and celery and lettuce. Drink nothing and eat lightly of dessert.

Drink all the water you want between meals but nothing at your meals. It was Bismark's physician who, on being asked to treat an otherwise beautiful Berlin lady for a poor complexion, said, "She is hopeless. She drinks too much." To the highly offended lady the physician explained that he meant too much water with her meals.

For the evening meal take cooked fruit, toast, a very little weak tea and all the good wholesome cake you want. Eat no fruit that is not cooked, and do not take meat more than once a day. This will give a dietary that will cure the worst complexion, and incidentally it will benefit the teeth.

Wrinkles.

Wrinkles come in a woman's face as soon as she is fully grown. If she be near-sighted and frown, they will come at an earlier age. Worry, care, a tired-out state of the system and sickness brings furrows into a woman's brow long before she is old enough to deserve them.

A wrinkle is like a crinkle in a piece of tissue paper. It is there, but it is easily smoothed out. It is work that must be done repeatedly, as wrinkles come back day by day, and with them you cannot look young.

No. 4
Manicuring the Nails.

No. 5
Removing Blackheads.

The wrinkle cure begins with a good face cream or skin food. This can be made at home. The best skin food or massage cream is as follows:—

Of pure mutton tallow take enough to fill an egg shell, warm it, and put in a double boiler over hot water, add half the amount of oil of sweet almonds. Scent with 5 drops of oil of rose geranium, beat with an egg beater as it cools. This can be used as a retiring cream.

At night before going to bed your hard work begins.

First, thoroughly wash the face. If you have not been out in the dust a good washing with the finger tips will do, otherwise you should steam the face. This is easily performed by holding a sponge of hot water to the skin. Do not burn the face, but lift the sponge, letting the water drip over the face; repeat until the skin is hot.

A flesh brush is good. It should be very soft and rubbed very lightly upon the skin. An assistant can give you the flesh brush treatment, running lightly over your face, neck and shoulders, using hot water and pure soap; rinse well afterwards. Then take the massage cream and massage the wrinkles. Take a little of the cream, melt it slightly, dip your clean finger tips and rub them across the wrinkles. They will smooth out under the magical influence of your fingers and the cream will sink into the cuticle and plump out the skin. It is the greatest wrinkle destroyer known. But wrinkles, after one has reached the age of forty years, must be rubbed out nightly or at least three times a week. That is the only way to banish them.

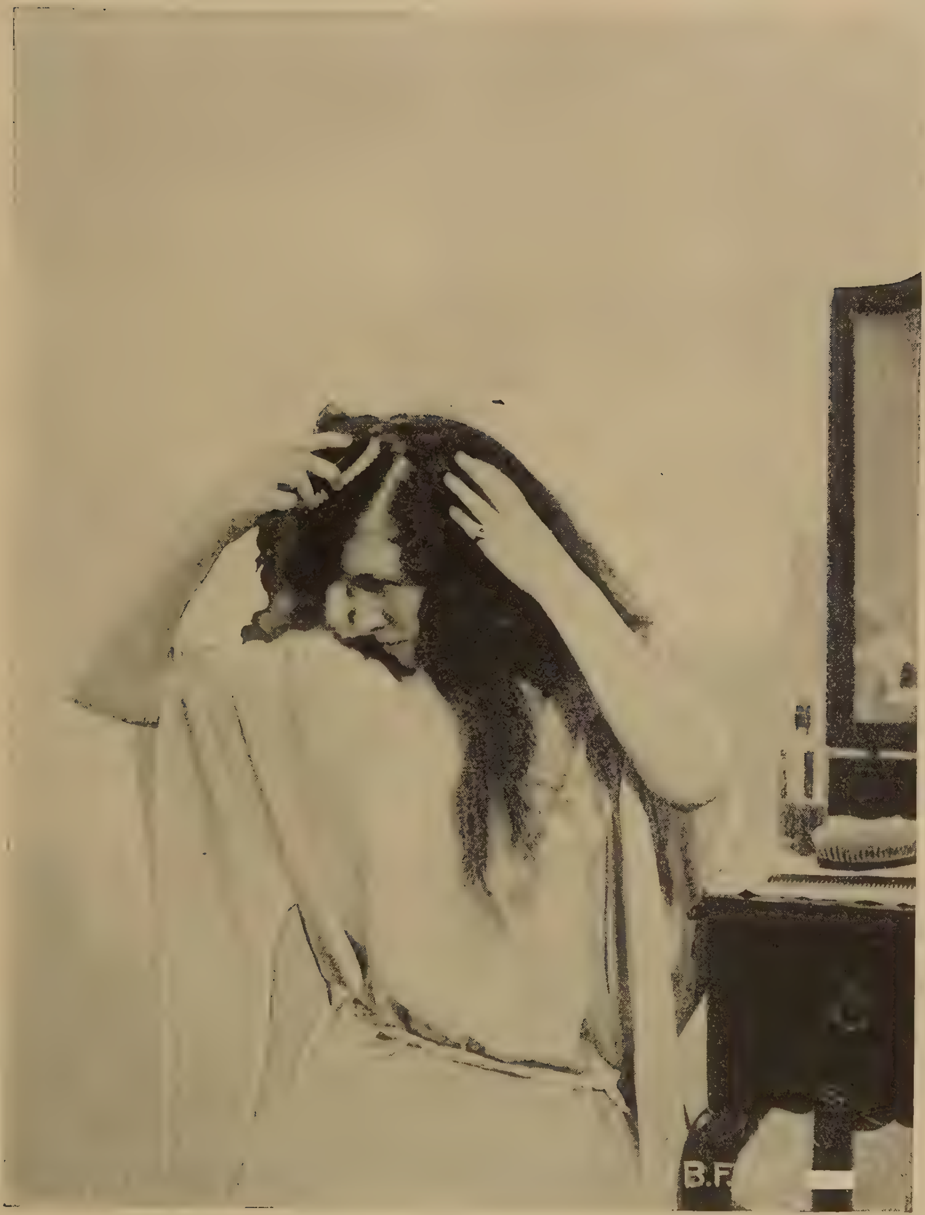
The plaster treatment has been tried with good results, and will appeal to women who have not time for the massage. The wrinkle is stretched flat, and slender strips of plaster are applied. When taken off, the wrinkle will be much lighter.

The arms and shoulders can be made plump by exercise, and by applying the skin food. Rub the food in, leaving it on the skin over night if possible. If the neck is thin and the chin is double—a combination often seen—take the neck and throat exercises which is as follows:—

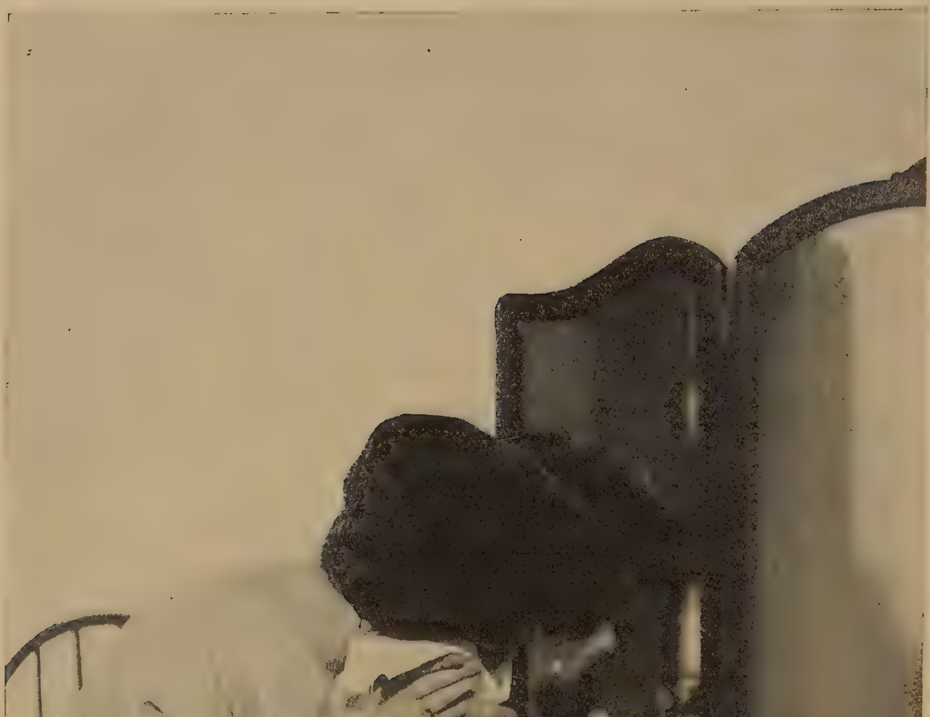
Bend the head backward and forward and sway the arms. Massage the neck with skin food. It will plump out the hollows and give a nice round neck.

Care of the Hands.

The care of the hands resembles the care of the face. The hands must be creamed every night. Once a week the nails should be filed until they are the shape of the tips of the fingers. The society woman with taper fingers will have pointed nails, but the business woman whose finger tips are blunt, should cut her nails rounding. The prettiest results are always obtained by filing the nails the shape of the finger tips.



No. 6
A Dry Shampoo.



No. 7
Steaming the Face.

The very long nail is good if one can keep it from breaking. To do so, rub the finger nails every night with vaseline and almond oil, and they will not break.

White spots are scars caused by the orange wood stick or by some sharp instrument used for pushing back the flesh from the base of the nails. Be careful not to press on the nail as you push back the flesh.

To clean the hands after working, take sweet oil and thoroughly rinse the hands with it, rubbing round and round as though one were using a cake of soap. Then fill in under the nails with a good hand soap by scraping the nails over the soap. Wash off in several waters, wiping and drying thoroughly.

Freckled hands in summer are caused by letting the sun touch the hands immediately after they have been washed. The freckles can be removed with lemon juice followed by cold cream, or with a cucumber water.

To make cucumber water, steep a cut-up cucumber in a pint of water; strain and add a teaspoonful of borax powder. Once a week wash the hands in a great basin of tepid water into which add about five drops of tincture of benzoin. This keeps the skin white.

Sleep.

Beauty depends largely upon one's sleep. The woman who sleeps soundly is more apt to keep her beauty than one who is sleepless. Plenty of exercise and plain food generally induce sound sleep.

Almost a sure cure for sleeplessness is that of remaining up until one is really sleepy. The woman who is awake from three to five every morning should try by remaining up until 12 o'clock to sleep until 7 o clock the next morning. This should break up the habit of waking early.

Sleeping with the arms over the head is an indication of backache. Young women with aching muscles most always throw the arms over the head to relieve the strain upon the back. Indigestion and a weak stomach also cause the afflicted one to raise her arms over her head at night. This is a bad habit, as it strains the muscles of the abdomen, and should be cured by rest and proper exercise; sometimes by eating before one goes to bed will help cure the habit. Crackers are too indigestible, but a good slice of bread and butter will sometimes assist in the cure.

Women who are recovering from a serious illness and wish to recover their beauty as well as their health, should devote certain moments of rest listening to strains of sweet music, which has a very strong influence upon the convalescent, as it is very quieting to the nerves.

Fresh air is beauty's great aid. An outdoor shady corner, with music, and a rose pillow, will call back the bloom to the cheeks and should be indulged in every day the weather permits.

Olive oil is a great beautifier. A tablespoonful taken before each meal will fill out the tissues and help the digestion, without making one fat.

Care of the Mouth.

The middle aged woman seldom or never has a lovely mouth. The teeth sometimes go early in life, and by the age of forty-five they are possibly in a poor condition. When you see an otherwise pretty woman with a crooked mouth, or with her mouth far to one side you say, "Some of her teeth are gone." If you investigate, you will find spaces on the crooked side of her mouth. As she lost her teeth her cheek on that side fell in, her mouth drew to one side and her beauty disappeared.

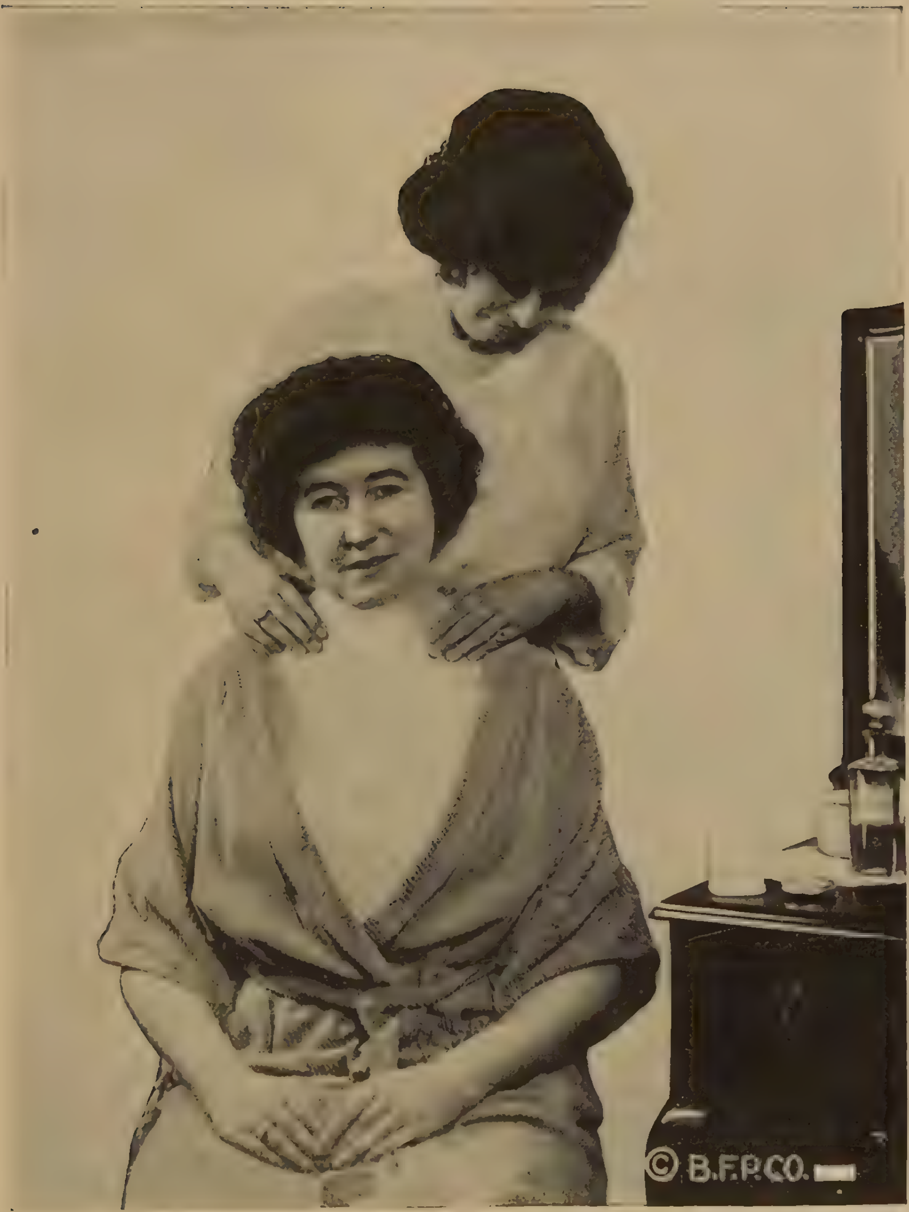
This can easily be avoided. Have your missing teeth supplied. In these days a good dentist implants teeth. He will also bridge or crown them in such a way that no gold is visible. Go to a cosmetic dentist. A cosmetic dentist is one who aims at beauty. He tries to make you better looking. He restores your teeth until they look just as they did when you were a girl of seventeen. He bleaches them, he straightens them, he replaces your teeth, and sends you home with a handsome mouth.

It is never pleasant to go to a dentist, but there is nothing which so amply repays one. Shun the dentist who puts gold in the front of your mouth. There is such a thing as an "old fogy" dentist, who tries to place a gold cap just where it will grin at the world every time you open your mouth. A cosmetic dentist will pivot the tooth. Don't argue, but find a dentist who is *full of his art.*

Keep the teeth nice by cleaning them with a good tooth paste at least twice a day. Once a week go over them lightly and quickly with some finely powdered pumice. Do not rub hard enough to hurt the enamel, but only sufficient to take off the stains. Rinse the teeth before going to bed at night, and always bear in mind that a sweet mouth is a most attractive feature.

Care of the Eyes.

In summing up beauty's requirements, it is difficult to say how the eyes should be classified, they are so much to the face. Beautiful eyes should be large and full. The lashes healthy and long, the eyebrows almost straight across the forehead. Meeting brows give one a scowling look. On the other hand scanty brows make one look frightened. If your eyebrows are thin, take a little vaseline and heat it with an equal quantity of pure almond oil. Stir together, pour into a jar and let cool; at night set the bottle in hot water and when the mixture is melted, apply to the eyebrows with a camel's hair brush. Paint them as delicately as though you were painting them upon a canvas.



No. 8
Massaging the Shoulders.

Washing the eyes with hot water at night will add much to their beauty. This clears them of dust and gives them a chance to rest during the night. On coming in upon a dusty day, wash the eyes with water to which borax powder has been added. In buying borax for the eyes, tell the druggist how you wish to use it; add a little to the water and bathe your eyes every day.

Fat faced women always have small eyes. As the fat increases on the face the cheeks puff up and the eyes dwindle. Eyes can be made larger if one will take the trouble to massage the cheeks until the fat is less noticeable. Never touch the eyes with the hands to make them larger.

Delicate women have large eyes with shadows under them. As they grow older these shadows become bags, generally caused by internal troubles. Bags under the eyes destroy the beauty of the face. To get rid of these bags or eye sacs, massage carefully and persistently, also reform the diet, for the eyes are particularly the sign of a bad liver. It is good to eat apples, cooked and raw; correct the liver and the eye sacs will disappear.

If the brows meet between the eyes, or if there is superfluous hair upon the upper lip, something must be done for its removal. The electric needle is best. If you wish to use the electric needle it is easily and cheaply acquired. Buy a set of electric cords, a wrist electrode, a needle, needle holder and a galvanic battery. The last mentioned can be used for many household purposes and is always money well spent. The outfit aside from the battery costs about three dollars.

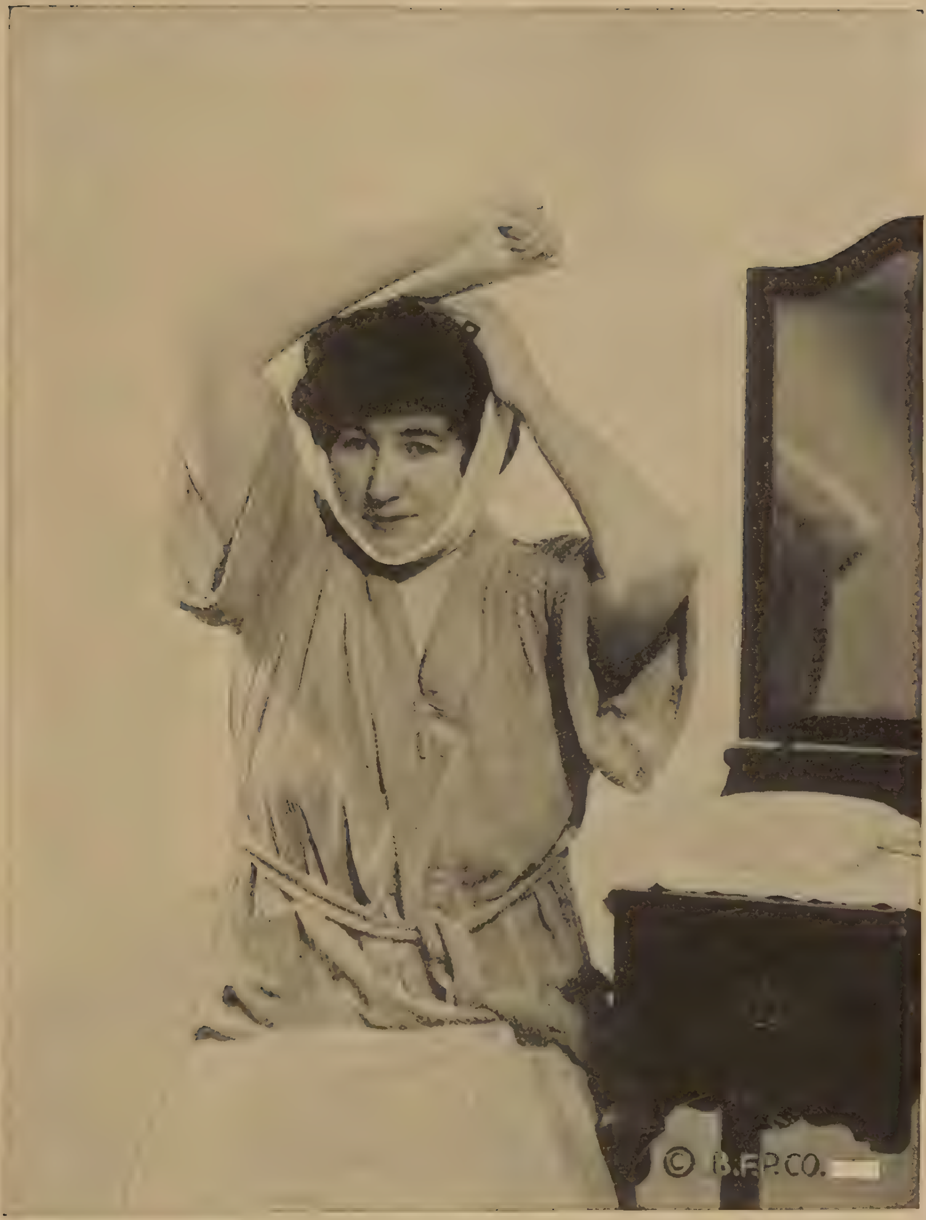
A woman troubled with superfluous hair on her upper lip pulled out the hairs and applied weak ammonia water; only half came back, she repeated the remedy, and after several treatments all the hairs disappeared.

If the hands and arms are covered with superfluous hair, the hairs can be made less noticeable by bleaching them with peroxide of hydrogen. Add a little ammonia to the peroxide. Ammonia will in time kill the constitution of the hair, and the hairs will fall out, meanwhile they will be so very light as to be hardly visible. Powdered pumice will take a light growth of down off the arms and wrists.

The Hair.

The hair should be studied by a woman as carefully as the care of the face. The hair is a great addition to any woman's looks, but from lack of proper care is frequently quite the reverse. It should be heavy, glossy, clean, and so arranged that it acts as a frame to the face. In these days all women can have heavy hair. The scalp should be massaged once a week with the finger tips and where the hair is getting thin, there should be the oil treatment for the scalp.

Pour into a thimble enough oil to half fill it. Use castor oil if



No. 9
Bandage for Preventing Double-chin.

you are equal to the odor, otherwise use pure oil of almonds. Part off the hair, dip the tips of the fingers one by one in the oil, and then carefully, so not to make the hair oily, go down the parting, gently spatting and massaging it. Part off the hair again, pat it, and continue until the whole scalp has been slightly oiled, but do not get a particle of oil upon the hair.

Shampoo the hair once in three weeks, with either an egg or soap shampoo.

For egg shampoo, use tepid water, wet well, then rub in the yolks of two eggs, rinse with several hot waters; in the last use a little borax to soften the water.

For soap shampoo, use the best castile soap. Make a suds but never rub the soap on the hair; rinse carefully.

To brighten the color of the hair, add a little baking soda to the shampoo, afterwards washing it out well. To make the hair "bloom," dry in the sun, afterwards shaking it out to ventilate.

Excellent Hair Tonic.

Take a 5-cent bar of white castile soap and dissolve in a quart of boiling water, boil 10 minutes, cool and add one pint of bay rum, one tablespoonful of borax and 20 grains of quinine. Add a tablespoonful to your shampoo water.

To Bleach or Redden the Hair.

To change the color of the hair is never good taste, but the hair can be brightened in some simple way. The woman who must bleach her hair can do so with pure peroxide of hydrogen, but it will look bleached, and moreover it requires constant care to keep it colored as it grows out. To redden the hair, wash it in henna tea made by steeping henna leaves in hot water.

A woman should take stock of her attractions frequently. She should study her weak points, fortify and improve them; it is labor, but labor well spent, for only in this way will she keep herself young and attain the desired end, namely, that of being always a young and beautiful woman.

To Enlarge the Bust.

An efficacious, yet safe method to enlarge the bust is a persistent massage with some bland oil, of which cocoanut or olive oil are good examples. With a rotary motion and little oil, the breast should be thoroughly rubbed morning and night for some weeks, and a gratifying result will be obtained.

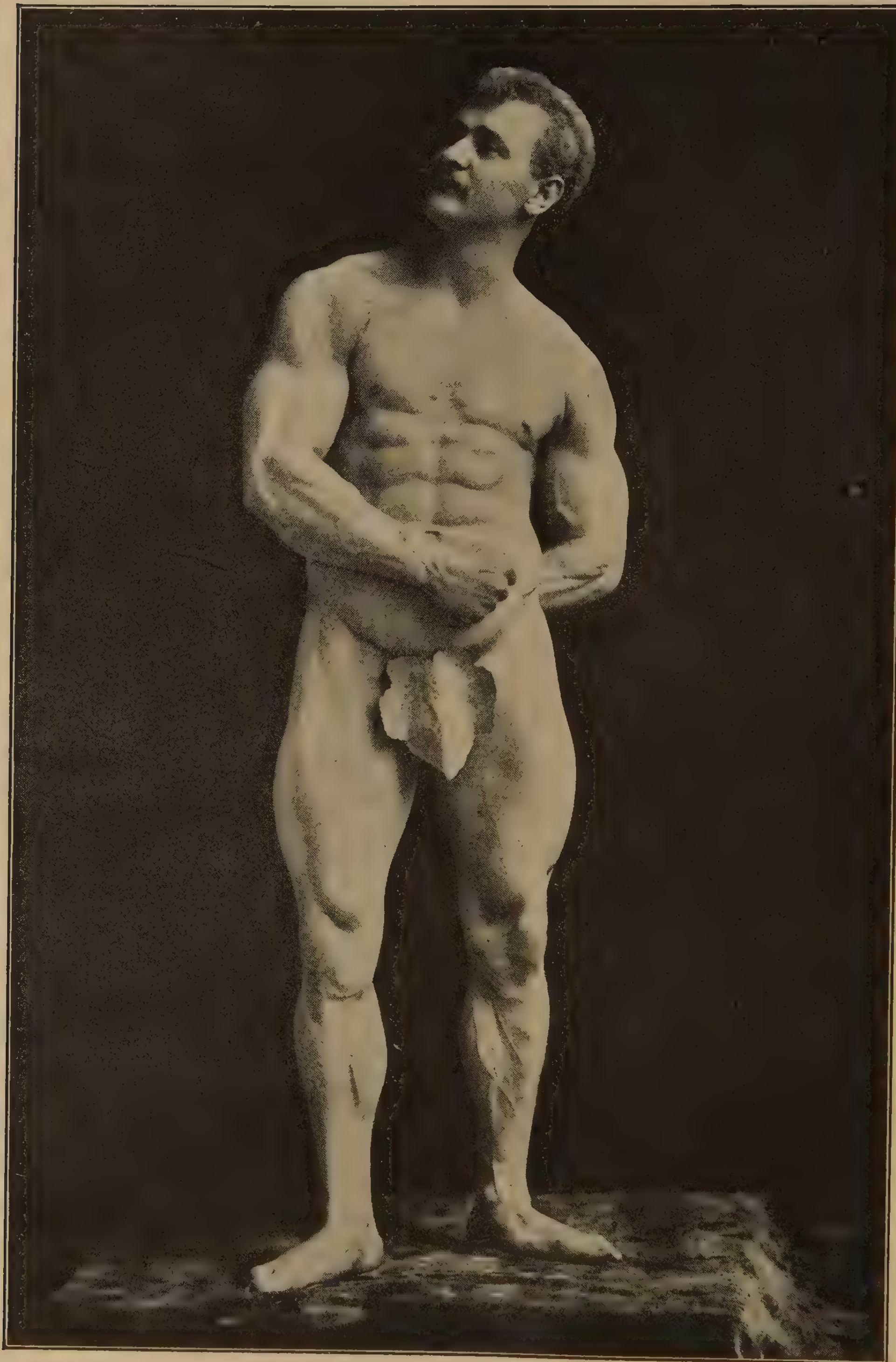
The employment of tablets, fancy formulas, etc., will only too often result in disappointment if not disaster.

PHYSICAL CULTURE

AND

GYMNASTICS

Diagram Showing One of Many Positions of the Body Cramping the Veins and Causing Congestion of Blood in Them, which Leads to all Manner of Ills. A Regular System of Exercise is Required to Keep the *Blood in Circulation* thereby Insuring Perfect Health.



PHYSICAL CULTURE — GYMNASTICS.

In America the noblest interests of the race have reached unparalleled development. In no other country, in no other age, has mental culture been so complete and universal. It is an era in the progress of the race. The fruits of labor which in other times and lands have been wasted upon the abnormal life of the few, have here, like air and light, the two great representative gifts of Heaven, found their way to the normal life of the million.

But in this hour of triumph the national life is jeopardized by physical exhaustion. While the admiring world looks on, our bodies upon which as a foundation our higher faculties must rest, crumble and give way. Precocious brains are borne about by doubtful spines; brilliant talents are linked with dying bodies.

Men, women, and children should be strong, but it should be the strength of grace, flexibility, agility, and endurance; it should not be the strength of a great lifter. Let me allude to the gymnastics of the circus. Permit me to call special attention to three features — to the man who lifts the cannon, to the india-rubber man and to the general performer. The lifter and the india-rubber man constitute the two mischievous extremes. It is impossible that in either there should be the highest physiological conditions; but, in the persons of general performers, is found the model gymnast. They can neither lift great weights nor tie themselves into knots, but they occupy a point between these two extremes. They possess both strength and flexibility, and resemble fine, active, agile, vigorous carriage-horses, which occupy a point between the slow cart-horse and the long-legged, loose-jointed animal. The race-horse has a much more vigorous circulation than the cart-horse. It is a fact not unfamiliar to horsemen, that when a horse is transferred from slow, heavy work to the carriage, the surface veins about the neck and legs begin at once to enlarge; when the change is made from the carriage to the cart, the reverse is the result.

And when we consider that the principal object of all physical training is an elastic, vigorous condition of the nervous system, the superiority of light gymnastics becomes still more obvious. The nervous system is the fundamental fact of our earthly life. All other parts of the organism exist and work for it. It controls all, and is the seat of pain and pleasure.

The impressions upon the stomach, for example, resulting in a better or worse digestion, must be made through the nerves. This supreme control of the nervous system is forcibly illustrated in the change made by joyful or sad tidings.

Could we have an unbroken succession of good news, we should all have good digestion without a gymnasium. But in a world of vexation and disappointment, we are driven to the necessity of muscle culture, and other hygienic expedients, to give the nervous system that support and vitality which our fitful surroundings deny.

If we would make our muscle-training contributive in the highest degree to the healthful elasticity of our nerves, the exercise must be such as will bring into varied combinations and play all our muscles and nerves. Those exercises which require great accuracy, skill and dash are just those which secure this happy and complete intermarriage of nerve and muscle.

Another point I take the liberty to urge. Without *accuracy* in the performance of the feats, the interest must be transient. This principle is strikingly exemplified in military training. Those who have studied our infantry drill have been struck with its simplicity, and have wondered that men could go through with its details every day for years without disgust. If the drill-master permits carelessness, then authority alone can force the men through the evolutions; but if he enforce the greatest precision, they return to their task every morning for years with cheerfulness.

At this point it may be urged that those exercises which hasten the action of the thoracic viscera to any considerable degree are simply exhaustive. This is another blunder of the "big-muscle" men. They seem to think you can determine every man's constitution and health by the tape-line; and that all exercises whose results are not determinable by measurement are worthless.

I need scarcely say there are certain conditions of brain, muscle, and of every other tissue, far more important than size; but what I desire to urge more particularly in this connection is the importance, the great physiological advantages, of just those exercises in which the lungs and heart are brought into active play. These organs are no exceptions to the law that exercise is the principal condition of development. Their vigorous training adds more to the stock of vitality than that of other organs.

I have said an elastic tone of the nervous system is the physiological purpose of all physical training. If one may be allowed such an analysis, I would add that we exercise our muscles to invigorate the thoracic and abdominal viscera. These in their turn support and invigorate the nervous system. All exercises which operate more directly upon these internal organs, as, for example, laughing, deep breathing, and running, contribute most effectively to the stamina of

Chest expansion.

Perfect back and shoulder development.

the brain and nerves. It is only this mania for monstrous arms and shoulders that could have misled the intelligent gymnast on this point.

As our artificial training is designed to fit us for the more successful performance of the business of life, I suggest that the training should be, in character, somewhat preparatory for those duties. If you would train a horse for the carriage, you would not do it by driving at a slow pace before a heavy load. If you did, the first fast drive would go hard with him.

Just so with a man. If he is to lift barrels of flour, or kegs of nails, as a business, he may be trained by heavy lifting; but if his business requires the average velocity and free motions of human occupations, then upon the basis of his heavy slow training, he will find himself, in actual life, in the condition of the dray-horse, who is pushed before the light carriage at a high speed.

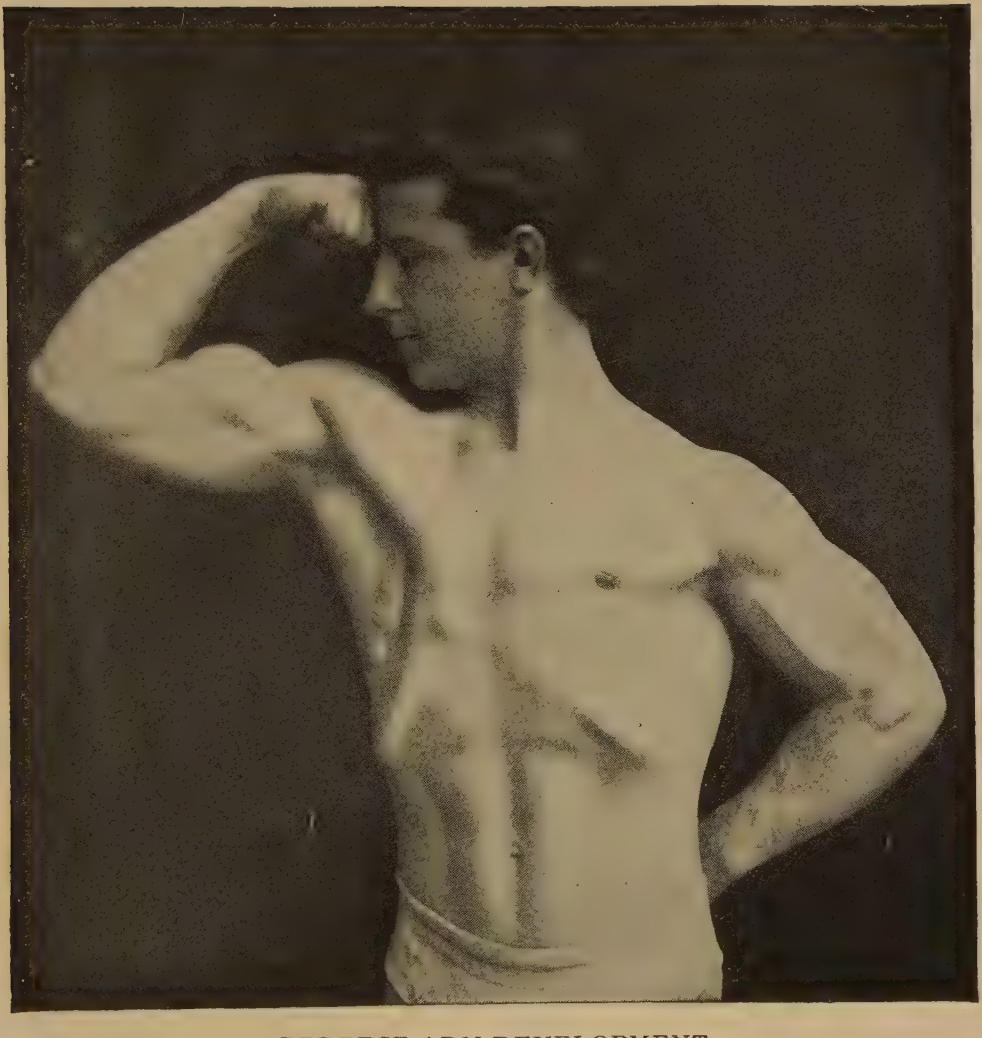
Is it true that in either intellectual or physical training, bold, brilliant efforts, under proper conditions and limitations, exhaust the powers of life? On the contrary, is it not true that we find in vigorous, bold, dashing, brilliant efforts the only source of vigorous, bold, dashing and brilliant powers?

In this discussion I have not considered the treatment of invalids. The principles presented are applicable to the training of children and adults of average vitality.

I will rest upon the general statement that all persons of both sexes, and of every age, who are possessed of average vitality, should, in the department of physical education, employ light apparatus, and execute a great variety of feats which require skill, accuracy, courage, dash, presence of mind, quick eye and hand,—in brief, which demand a vigorous and complete exercise of all the powers and faculties with which the Creator has endowed us; while deformed and diseased persons should be treated in consonance with the philosophy of the *Swedish Movement Cure*, in which the movements are slow and limited.

We rejoice to see that the American people of all classes and both sexes are taking more and more interest in outdoor sports. The bicycle, if used in reasonable moderation, will prove a great factor in the physical development of both sexes; but the danger is that the American idea of trying to outdo others will cause the young with untried muscles to attempt century runs and generally to overdo; while, if they should take reasonable rides, and enjoy the fresh air and scenery, it would prove a benefit to mind and body.

There are many simple contrivances to use at home, if not convenient to take full gymnastic courses. We give a description of several, either of which, if faithfully used, will be of great benefit.



PERFECT ARM DEVELOPMENT.

Lifting heavy dumb-bell to show perfect physical development—(In dumb-bell practice, however, only the light wooden dumb-bells should be used.)

Dumb-bell Exercise.

To those, then, who say they have no time for exercise, we heartily recommend our home lessons, which, in connection with a daily walk will be just exactly what is required to secure physical perfection and muscular strength, without putting yourself to but very little trouble to attain it. Ten or fifteen minutes daily, morning and evening, or to suit convenience it may not be so divided, but may all be taken in the morning, or all in the evening, will, in connection with walking, keep the muscular system in perfect condition, and thus insure perfect bodily health.

Exercise should *never be taken immediately after a plentiful meal, nor should it be taken to excess, particularly during hot weather.* In the former case too much cerebral influence for the time being expended in muscular action, the amount of it conveyed to the stomach is insufficient for the laborious function that viscus has to perform, and indigestion is the consequence. It is possible to fatigue the body beyond a proper point, in which case repose becomes necessary; but this is a rare occurrence compared with the instances of insufficient exercise, or where the mind is stretched beyond its natural power to bear, by the ambitious student, the covetous and careworn merchant.

All persons of both sexes, and of every age, who are possessed of average vitality, should, in the department of physical education, employ light apparatus, and execute a great variety of feats, which require skill, accuracy, courage, dash, presence of mind, quick eye and hand,—in brief, which demands a vigorous and complete exercise of all the powers and faculties with which the Creator has endowed us.

The following dumb-bell exercise will prove a tremendous advantage, perfect development and good health.

In no case should the pupil bend the legs at the knee, or his arms at the elbow, unless it is so directed. No rule in the dumb-bell exercises is so important as this. If it be forgotten, exercises with dumb-bells will lose more than half their value.

No. 1. The position is shown in Fig. 1. Thumbs outward. Bells exactly horizontal. Turn the thumb ends of the bells to the hips, and then back again to the position shown in the figure. Repeat ten times. Let the change be made with the greatest accuracy. When it is well done, no matter which end is at the hip, a straight rod run through one dumb-bell, lengthwise, would at the same time run through the centre of the other.

In this and all subsequent dumb-bell exercises, the pupil must be careful not to bend the elbows. When exceptions to this rule occur, they will be plainly indicated.

No. 2. Position seen *Fig.* 2. Keep the elbows pressed against the sides and twist the bells so the ends are exactly reversed. Be sure they are exactly in line with each other, and the forearms parallel. *Repeat ten times.*

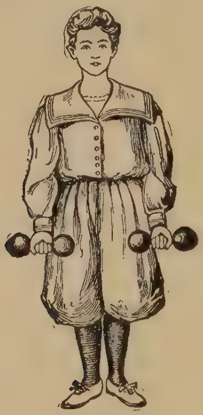


Figure 1.

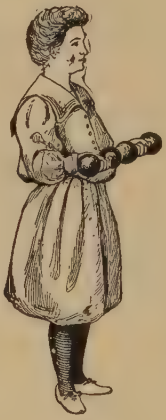


Figure 2.

No. 3. In passing from No. 2 to No. 3, bring the bells to the chest, and on the next beat to the position in *Fig.* 3. The palms of the hands are upward. Bells exactly horizontal and parallel to each other. Turn the hands over, knuckles upward. Bells now exactly in the same position as before. *Repeat ten times.*

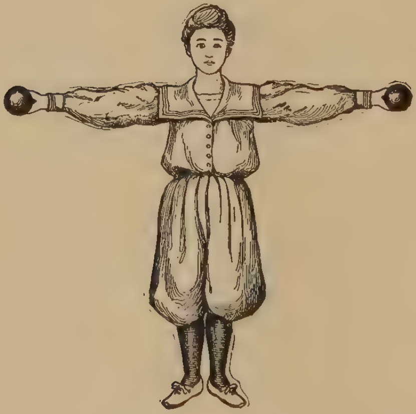


Figure 3.

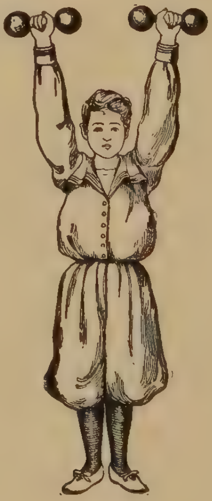


Figure 4.

No. 4. In passing from No. 3 to No. 4, bring the bells to the chest, and on the next beat to the position in *Fig.* 4. The palms forward.

Twist the bells so the knuckles are forward. *Repeat ten times.* Arms to be kept parallel from first to last.

No. 5. Position as in *Fig.* 5. In passing from No. 4 to No. 5, bring the bells to the chest. Twist the arms so that the bells are exactly reversed.

It will be seen in the figure, the palms are upward. When the bells are reversed, the knuckles are upward. Keep the arms parallel. *Repeat ten times.*

In passing from one exercise to another, I have spoken of bringing the bells to the chest. They should strike the chest exactly at the point shown in *Fig.* 6.

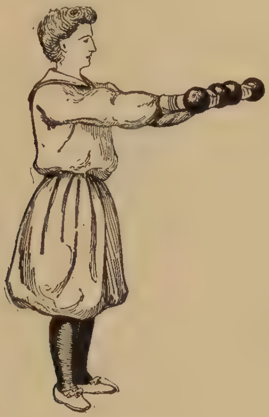


Figure 5.

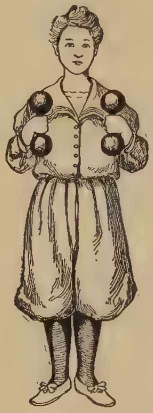


Figure 6.

No. 6. Thrust the two bells down by the side of the legs. Bring to the chest, and thrust them sideways. Bring to the chest and thrust them upward. Bring to the chest and thrust them forward. *Repeat these four thrusts five times.*

When the down thrust is made, the pupil must be careful that at the lowest point the bells are precisely horizontal, and parallel to each other. When the side thrust is made, the arms must be horizontal, the bells perpendicular and parallel to each other. When the upward thrust is made, the arms must be accurately perpendicular, bells parallel and horizontal.

When the forward thrust is executed, the arms must be exactly horizontal, and the bells perpendicular and parallel.

No. 7. Raise the right-hand bell from the side of the leg into the arm-pit, five times. (*Fig.* 7.) Left, five times. Alternately and simultaneously, five times.

Be sure that each time when the bells come into the arm-pits they are exactly horizontal.

No. 8. Passing from No. 7 to No. 8, bring the bells to the chest; on the next beat to the top of the shoulders; on the next beat carry up the right, reaching accurately the position seen in *Fig.* 8. *Repeat five times.* Left the same. Alternately and simultaneously, each *five times.*

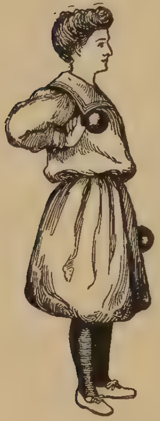


Figure 7.

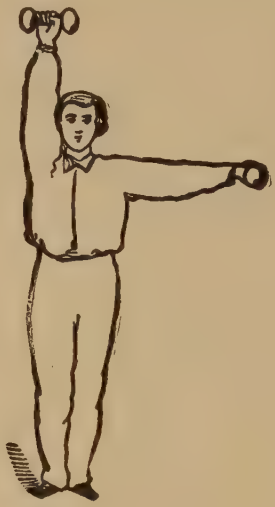


Figure 8.

No. 9. Passing from No. 8 to No. 9, bring the bells to the chest (the dotted lines in *Fig.* 9 show it), then down by the sides; in all, as usual, keeping good time to the music. Now carry the right bell to the chest, then up, reaching the position shown in *Fig.* 9. Return to the hip, marking one beat on the chest in going down. *Repeat ten times.* Left, the same. Alternately and simultaneously, *ten times.*

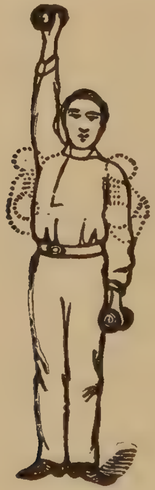


Figure 9.

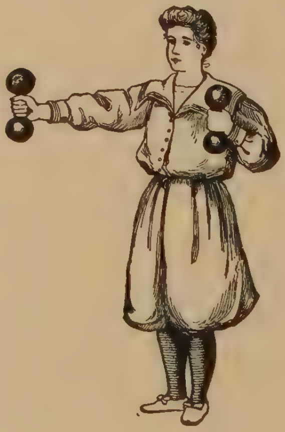


Figure 10.

No. 10. Bring the bells to the chest. Strike out the right one in front, arm precisely horizontal, bell perpendicular. (*Fig.* 10.) *Repeat twenty times.* Left, the same. Alternately and simultaneously, *twenty times.*

As usual, keep the chest well forward, and the shoulders drawn far back.

No. 11. Holding the bells in the position seen in *Fig.* 11, bring them with *great force* into the position seen in the dotted line, forty times. In beginning this elbow-thrust backward, it is well to first raise the bells a foot, that they may be brought back with more force, and more directly into the position seen in the dotted lines. But in carrying them forward again, it should be first into the position seen in the figure.

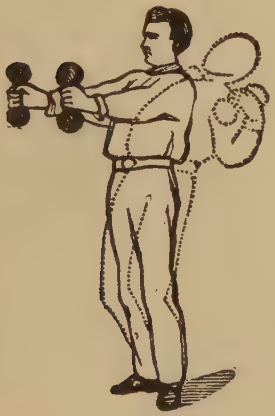


Figure 11.

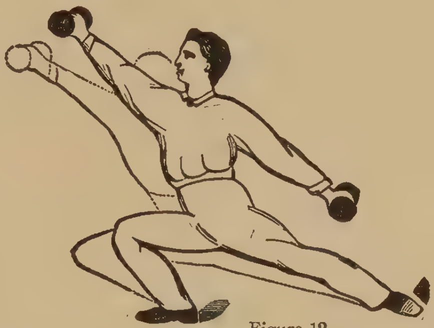


Figure 12.

No. 12. Stamp the left foot, then the right, then charge out into the position seen in *Fig.* 12. Make sure that the leg behind, *in this and all subsequent charges*, is kept entirely straight, while the one forward is placed as shown in the figure. Holding the arms as illustrated, force the entire person into the position of the dotted lines, five times. *There should be no motion in the shoulder joints. The chest is pushed far forward, and the shoulders drawn well back.* These directions are applicable to all charging exercises, in which a different course is not plainly indicated.

It will be observed that the charge in No. 12 is exactly sideways.

Rise to the perpendicular again, stamp with the right foot, then the left, and lastly charge out on the left side, and repeat the performance of the right side *five times.*

No. 13. Rise to the perpendicular, stamp with the left foot, then with the right, then charge out as shown in *Fig.* 13. Under the directions given in No. 12, sink five times.

Same on the left side, of course with the intermediate stamping.

No. 14. After the regular stamping, the pupil should charge in the manner illustrated in *Fig.* 14. Sink five times.

Same on the left side.

In this, as in *Figs.* 12 and 13, the charging is exactly sideways.

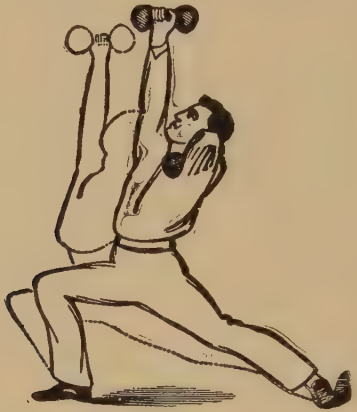


Figure 13–14.

No. 15. Stand upright, hands by the side. Raise the right hand, as shown in *Fig.* 15, five times. Left, the same. Alternately and simultaneously, five times.

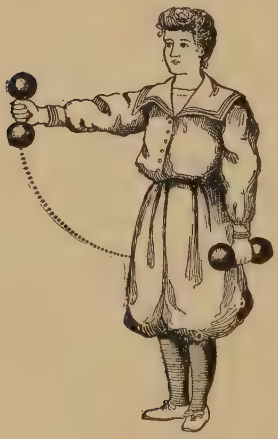


Figure 15.

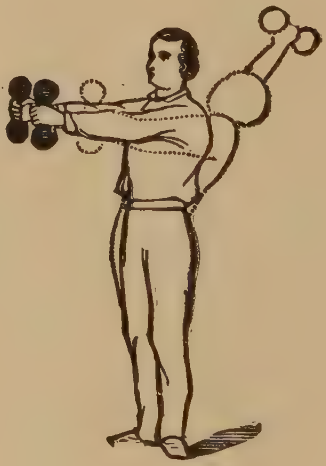


Figure 16.

In this the arm is carried up with a quick, strong effort, and arrested at the horizontal line, precisely as if it had struck a rock. When it is brought back to the side again, it is with the same force and sudden arrest. This and the next one are among the most severe of the dumb-bell exercises.

No. 16. Assuming the position seen in *Fig.* 16, force back the right arm, as seen in the dotted line, five times. Left the same. Alternately and simultaneously, five times.

The arm must not be bent at the elbow.

The directions given in No. 15, in regard to force and sudden arrest, are applicable to this exercise.

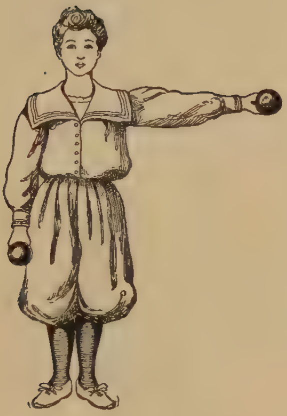


Figure 17.

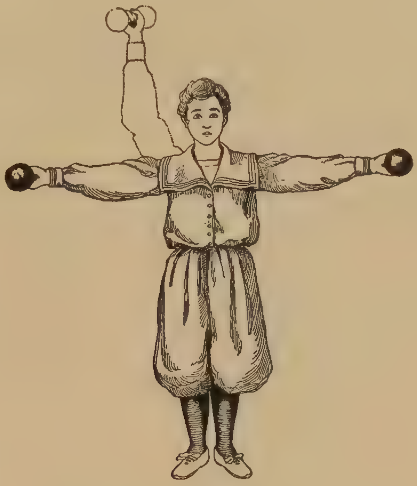


Figure 18.

No. 17. Beginning as in No. 15, with the arms hanging, combine the two exercises, Nos. 15 and 16, in one sweep, reaching the position of the dotted line in *Fig.* 17. Repeat five times. Left hand the same. Alternately and simultaneously, five times.

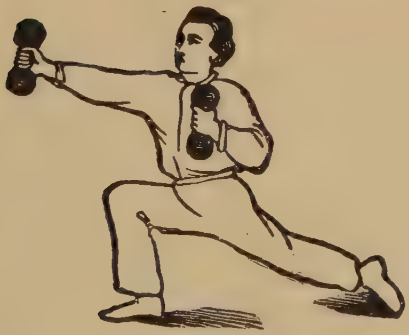


Figure 19.

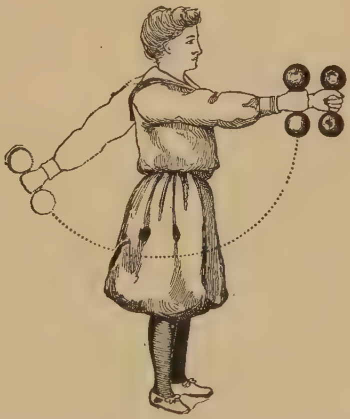


Figure 20.

No. 18. Stand upright, arms hanging. Raise the right arm to the horizontal, at the side, with the palm up. Repeat five times. Left, the same. Alternately and simultaneously, five times. The position of one of the arms is seen in *Fig.* 17.

No. 19. Having the arms extended at the sides as shown in *Fig.* 18, raise the right arm to the position seen in the dotted line, five times. Left, the same. Alternately and simultaneously, five times.

In raising the dumb-bells over the head, be careful that they are in such a position that, when the two are up together, they are exactly horizontal and parallel to each other.

No. 20. Beginning as in No. 18, arms hanging, combine Nos. 17 and 18, in one sweep, each arm five times. Alternately and simultaneously, the same.

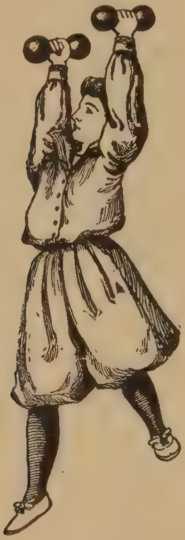


Figure 21.

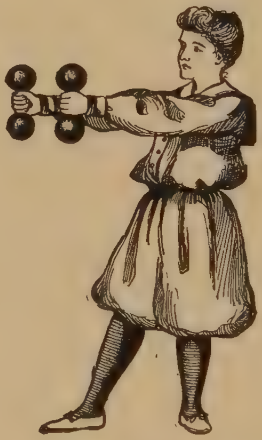


Figure 22.

No. 21. Standing upright, arms hanging, charge into the position shown in *Fig.* 19; remaining thus, thrust the arms in front, in a horizontal line, five times, alternately and simultaneously. Rising to the perpendicular, stamp with the right foot, then the left, then charge out with the left foot, and repeat the exercises with the arms.

It will be seen by the figure that the leg behind is kept entirely straight and rests on the toe. The special point in this exercise is to reach the dumb-bell as far forward as possible.

No. 22. Standing as represented in *Fig.* 20, force the right arm into the position shown in the dotted line, five times. Left the same Alternately and simultaneously, five times.

In this exercise keep the body as erect as possible.

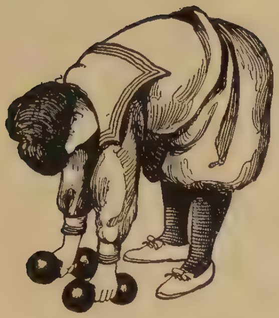


Figure 23.

No. 23. Having the arms perpendicular over the head, perform the same exercise as in the last number, with right hand, left hand, then alternately and simultaneously.

No. 24. Placing the feet in position of *Fig.* 21, raise the arms with great force from the hanging position to that seen in *Fig.* 21. On the next beat bring the arms to the position seen in *Fig.* 22; on the next to that seen in *Fig.* 23; on the next beat sweep back to the position seen in *Fig.* 22; then to the position seen in *Fig.* 21. *Repeat five times.* Stamp right and left, then step out with the left foot, then swing the arms over the head, performing the same exercise on the left side.

In this exercise neither arms nor legs should be bent.

No. 25. Stand erect, arms horizontal in front and parallel to each other. Carry the right hand backward in the horizontal plane (*Fig.* 24) as far as possible; return it. Repeat ten times. Left the same; alternately and simultaneously, ten times.

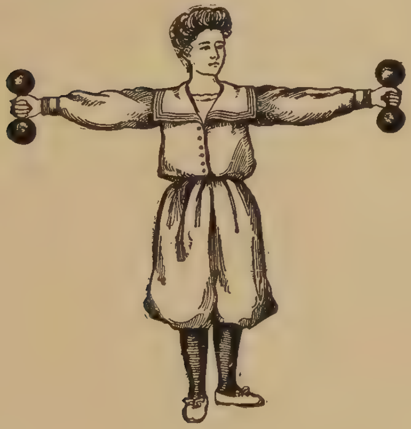


Figure 24.

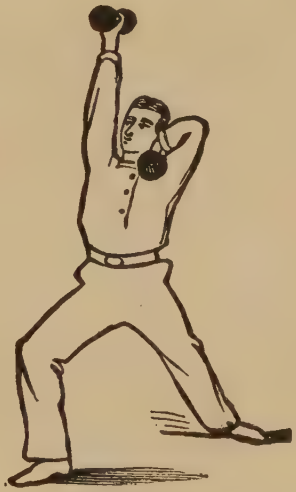


Figure 25.

No. 26. Standing erect, arms hanging, stamp with the left foot; then with the right; then charge into the position seen in *Fig.* 25, and thrust the arms in a direct line upward, alternately and simultaneously, ten times. Assuming the erect position, drop the arms by the side, stamp the right foot, then the left, and charge out on the left side; repeat the exercise with the arms.

In this exercise, it will be seen, the leg behind is straight, that charged forward, considerably bent.

No. 27. As in nearly all other exercises, begin with the heels together, body erect, chest forward, shoulders back, arms hanging, dumb-bells horizontal and parallel to each other. Step diagonally backward with the right foot, as seen in *Fig.* 26, and repeat the exercises in No. 26. Same with the left foot.

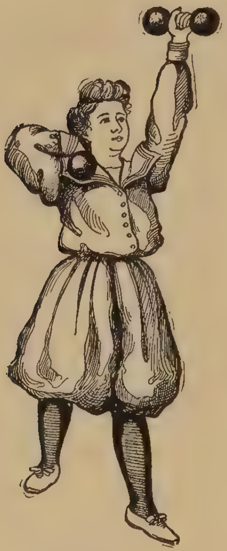


Figure 26.

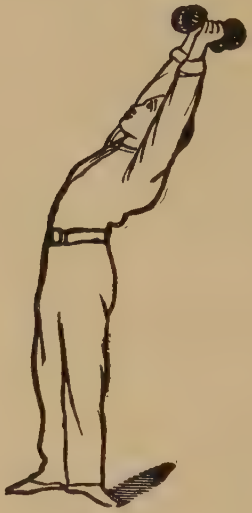


Figure 27.

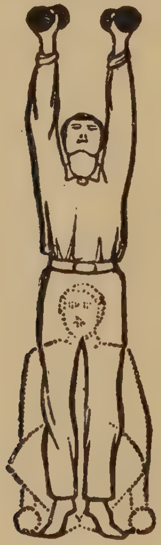


Figure 28.

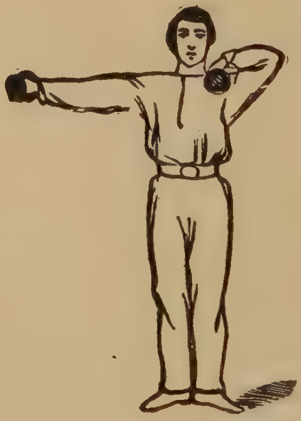


Figure 29.

In this exercise the forward leg is kept straight, that behind is bent as much as possible.

No. 28. Bells on the chest. Carry the right arm out at the side, thrusting it as far back as possible; suddenly bring it back to the chest in a circle as if grasping a large body standing in front. Repeat five times. Left hand, same. Alternately and simultaneously, same.

In this exercise the arms should be kept in the horizontal plane, and should in the performance of the exercise enclose as large an armful of the imaginary objects as possible.

No. 29. Standing erect, arms hanging at the side, suddenly turning the body to one side as far as you can twist it without moving the feet, carry the arms to the position seen in *Fig.* 27. Bring them back to the sides, while at the same time you bring the body to the first position. Swing the arms up on the other side, and so continue, alternating twenty times.

No. 30. Standing erect, arms hanging, bring the bells to the chest, then to the floor, as shown in the dotted line in *Fig.* 28; then rising, bring the dumb-bells again to the chest, and on the next beat thrust them as far upward as possible, rising on the toes; then back to the chest. Repeat twenty times.

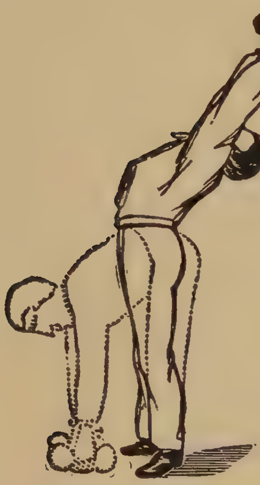


Figure 30.

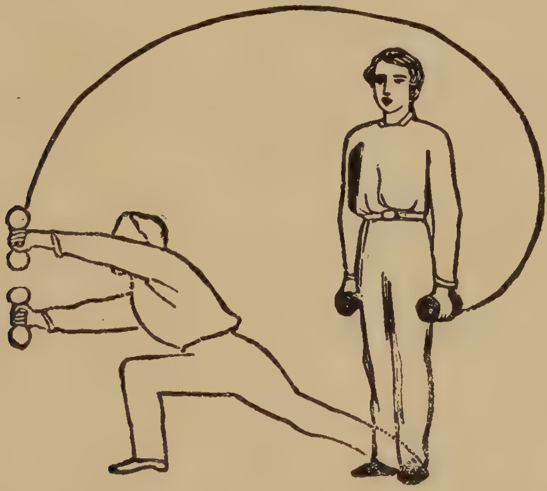


Figure 31.

No. 31. Standing erect, dumb-bells on the shoulders (not on the chest), thrust the right arm out at the side as seen in *Fig.* 29, ten times. Left, the same. Alternately and simultaneously, the same.

No. 32. Standing erect, arms hanging, carry the arms to the horizontal in front; then to the position over the head seen in *Fig.* 30; now down to the horizontal again, and then to the floor as seen in the dotted line. Repeat ten times.

In this exercise there must be no bending at the knees or elbows.

No. 33. Standing erect, arms hanging, charge out with the right foot, and sweep the left arm as shown in *Fig.* 31; on the next beat return to the first position. Repeat five times. Same on the left side. Alternately, five times.

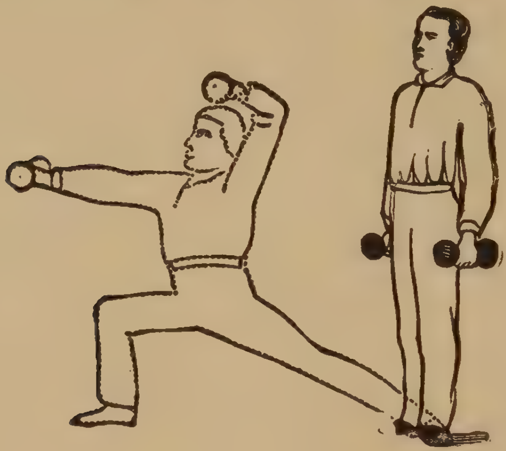
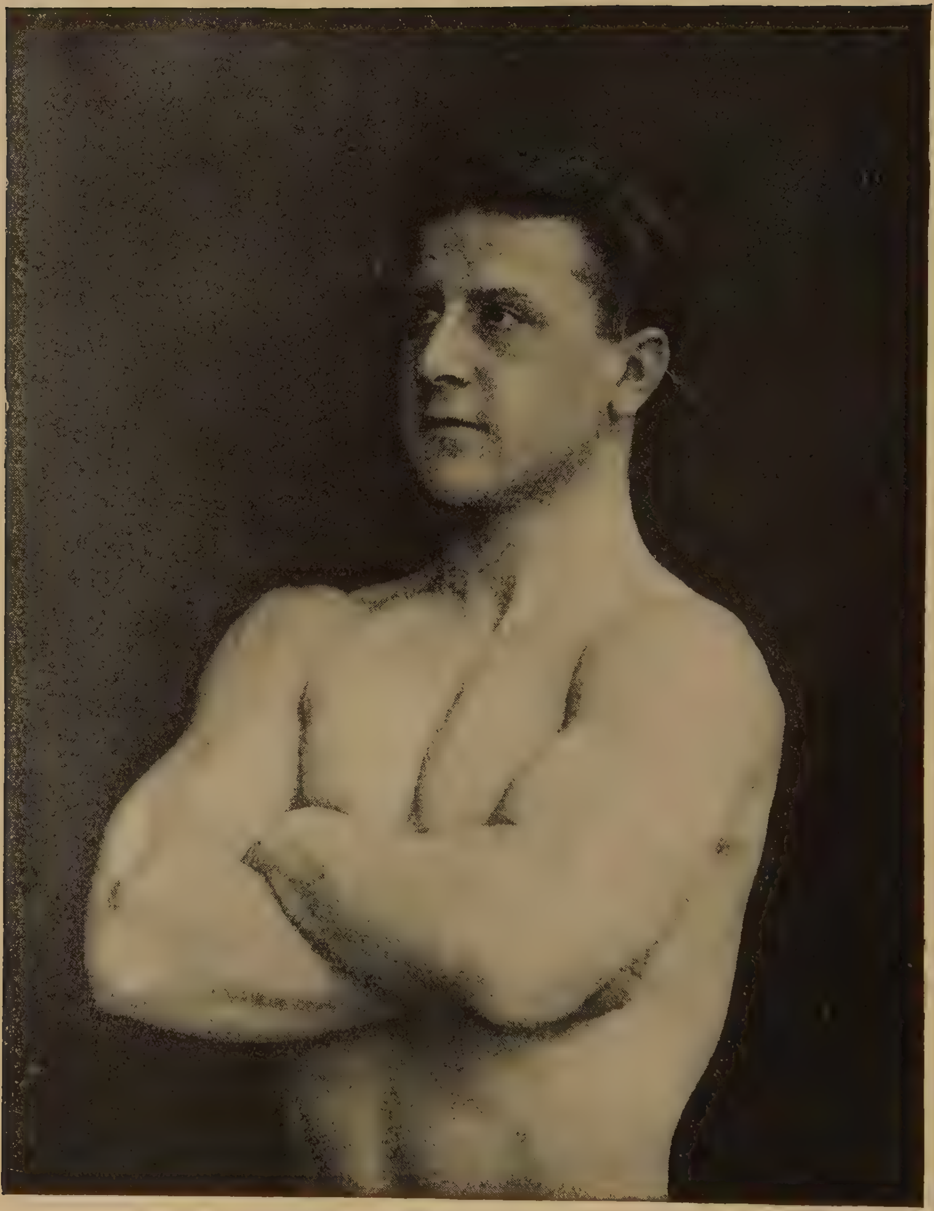


Figure 32.

No. 34. Standing erect, arms hanging, without moving the body, carry the right foot out sideways, lifting it from the floor, and bringing it back to the other foot, without bending the knee, five times; then charge into the position seen in *Fig.* 32, and return to the first position, five times.

The arm which is brought over the head must be carried in a direct line from the side to the position over the head, and not brought toward the front of the body in its passage up or down.



A STUDENT OF PHYSICAL CULTURE.

Showing perfect Arm, Chest and Waist Development.

"A noble soul dwells in a strong body."
—*Japanese Proverb.*

JIU-JITSU

— BY —

American College of Physical Culture

We know that you will find interest in reading and demonstrating to your own satisfaction the effectiveness of Jiu-Jitsu, in its mildest form, as a means of self-defense.

This is the first time that all the secrets of the Japanese national system of physical training and self-defense have been given to Western people. Less than a generation ago, you could not have obtained this knowledge at any price. So religiously have the principles of Jiu-Jitsu been guarded that no foreigner has ever before received official instruction from one who has taken the highest degree in the art.

Jiu-Jitsu is the most wonderful system of physical training the world has ever known. It is a science. It is muscle dominated and directed in every detail by brain. The Japanese are the hardiest race of people in the world to-day, and we attribute their wonderful strength and power of endurance solely to the persistent practice of their national system of physical development. Jiu-Jitsu develops every muscle and strengthens every organ in the human body. It does not produce knotted muscles, but develops the body harmoniously and uniformly. It affects those minute muscles which are not reached by any other system. It strengthens the heart action, scientifically renews and invigorates every tissue, and helps every organ to perform its functions. The man or woman who devotes ten minutes daily to the practice of Jiu-Jitsu will enjoy a degree of health and strength that will make him or her thoroughly alive and fully conscious of the possession of perfect manhood or womanhood. (The improvement of the average American pupil in from thirty to sixty days is as follows: Development of the chest, three to four inches; chest expansion, three to five inches; upper arm, one to two inches; forearm, one-half to one inch; thigh, two to three inches; and the entire body in proportion.)

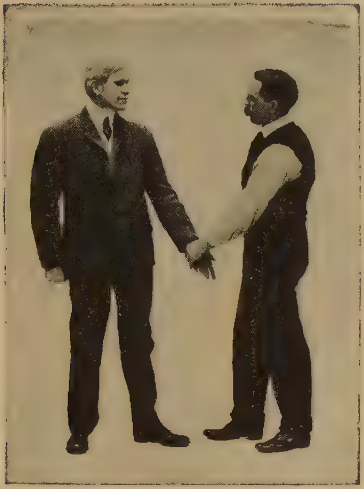
Jiu-Jitsu is also a natural and positive cure for constipation, indigestion, and all forms of dyspepsia, insomnia, pulmonary troubles,

and lack of vitality. Its practice improves the appetite, accelerates circulation, and aids assimilation. And to the increased vigor and tone of the system the brain responds, and the mental capacity as well as the physical is improved. The Japanese enjoy better health than any other nationality. With them consumption is very rare, dyspepsia has no meaning, and physical weakness is an affliction with which only the aged are beset. Extreme leanness is regarded in much the same manner as Americans regard physical deformity, and extreme corpulency is unknown. There is a reason for all this and it is found in Jiu-Jitsu.

As a means of self-defense, Jiu-Jitsu is as potent at short range as the most deadly weapon that human ingenuity has devised. A Japanese skilled in this art has no fear of any form of personal attack. He will even defend himself unarmed against a swordsman and emerge from the combat victorious. The science of Jiu-Jitsu takes into account the vulnerable points in the human body. It comprehends the laws of mechanics, thus enabling the weak to overthrow the strong. One unskilled in the art is entirely at the mercy of the expert Jiu-Jitsuian, no matter how unequally matched in point of size or strength the contestants may be. An opponent may be overcome and remain unharmed if it be the will of the operator, or he may be seriously disabled by a slight pressure exerted at a vulnerable point, or a sharp twist of the arm, as to be rendered utterly helpless and unable to renew the attack.

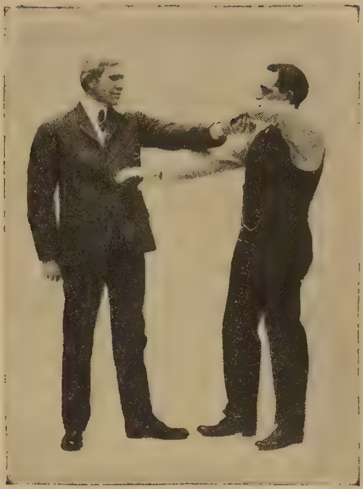
The following illustrations give some idea of the first lessons in Jiu-Jitsu, which represent Professor J. J. O'Brien, who was for many years a resident of Japan, and received his diploma as Professor of Jiu-Jitsu from the Government of Japan.

Professor O'Brien was the teacher who instructed President Roosevelt, members of his Cabinet, and heads of many of the Departments in Washington.



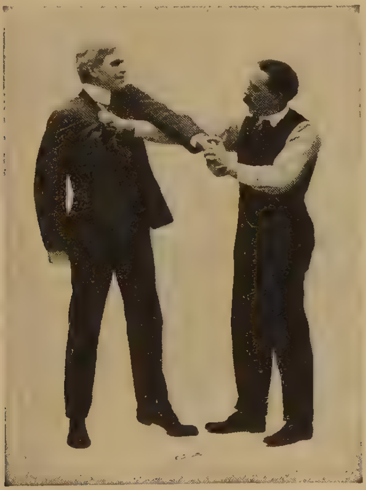
LESSON A. POSITION No. 1.

Take your opponent by the left hand firmly, as above illustrated.



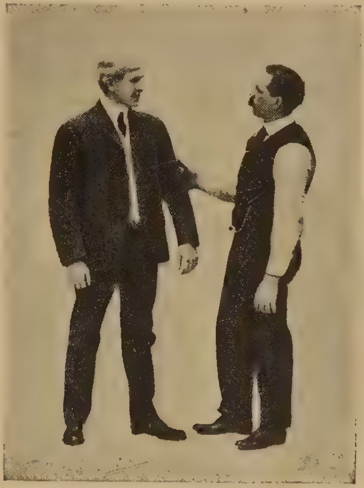
LESSON A. POSITION No. 2.

Raise the left arm, turning your opponent's wrist inward with your left; slide your right under your opponent's left.



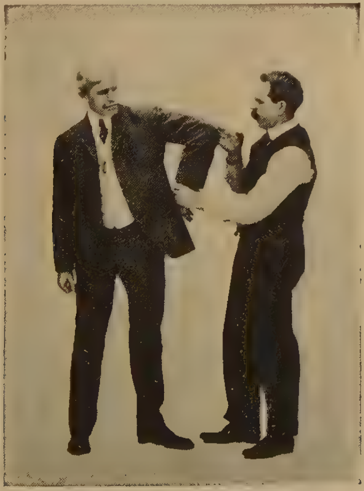
LESSON A. POSITION No. 3.

Grasp your opponent's lapels firmly; stiffen your right arm, pushing your opponent's left from you until it rests on your right forearm. At the same time twist your opponent's left wrist inwardly and down.



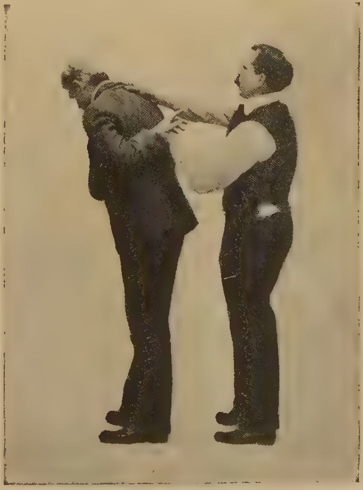
LESSON B. POSITION No. 1.

Place your right hand on your opponent's left arm at the elbow.



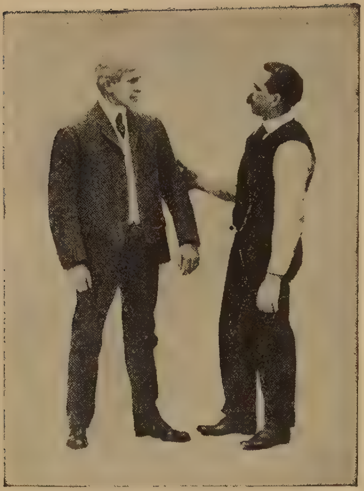
LESSON B. POSITION No. 2.

Take your opponent's left hand at the wrist with your left, raising it outwardly, using your right to push his elbow forward.



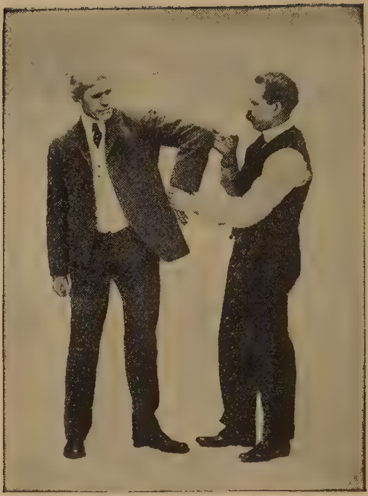
LESSON B. POSITION No. 3.

This will turn your opponent so his back will face you. Draw his left arm up, twisting the wrist with your left, taking a firm hold of your opponent's coat collar with your right.



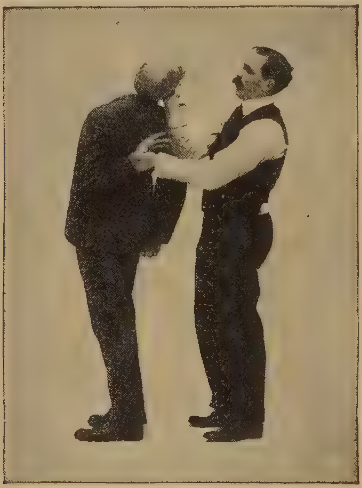
LESSON C. POSITION No. 1.

Place your right hand on your opponent's left arm at the elbow.



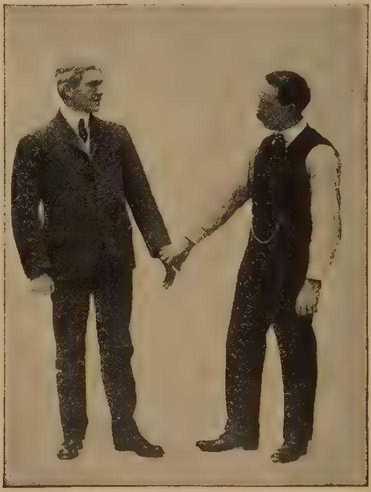
LESSON C. POSITION No. 2.

Take your opponent's left hand at the wrist with your left, raising it inwardly, using your right to push his elbow forward.



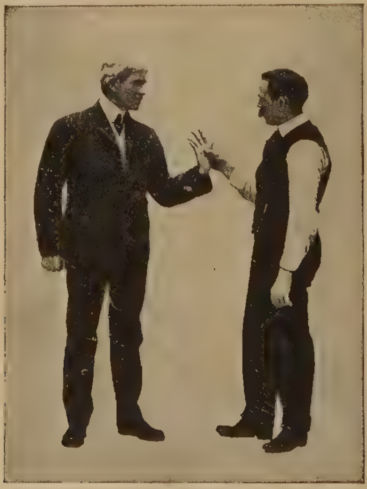
LESSON C. POSITION No. 3.

This will turn your opponent so his back will face you. Draw his left rm up, twisting the wrist with your left, taking a firm hold of your pponent's chin with your right and twist his head backwards.



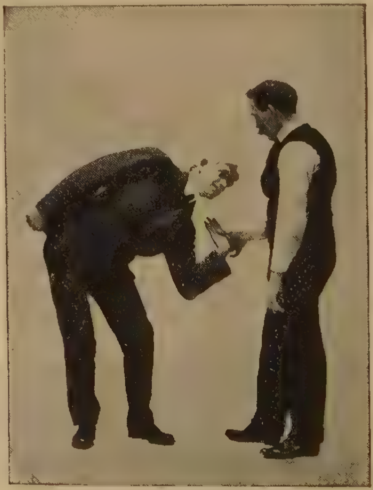
LESSON D. POSITION No. 1.

Take your opponent's left hand with your right so your thumb will rest on the back of his knuckles and your four fingers on the ball of your opponent's hand.



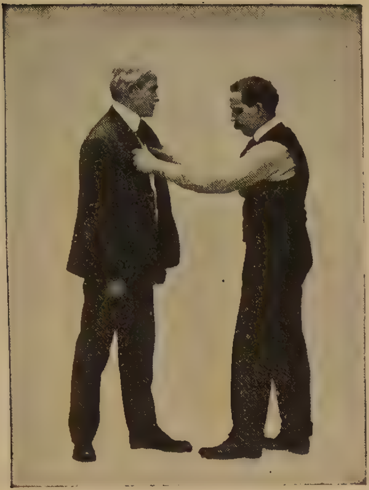
LESSON D. POSITION No. 2.

Raise his hand as shown in the above illustration, hold it firmly.



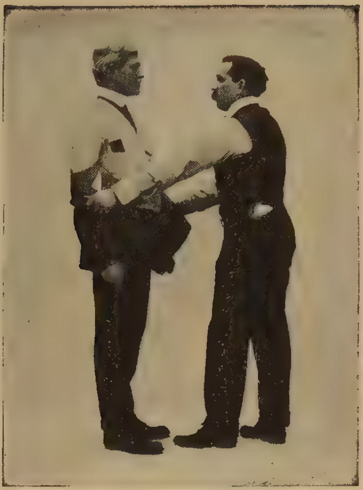
LESSON D. POSITION No. 3.

Press your opponent's hand backwards with your thumb and at the same time twist his hand to the right with your fingers.



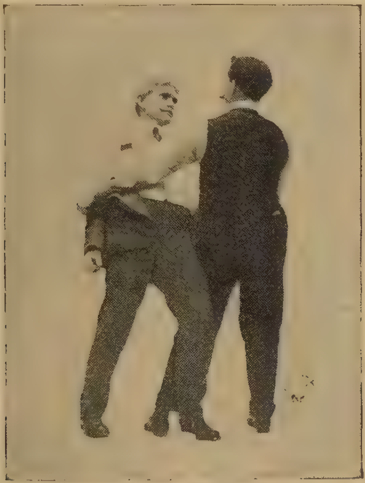
LESSON E. POSITION No. 1.

Take your opponent firmly by the lapels of the coat, drawing him to you.



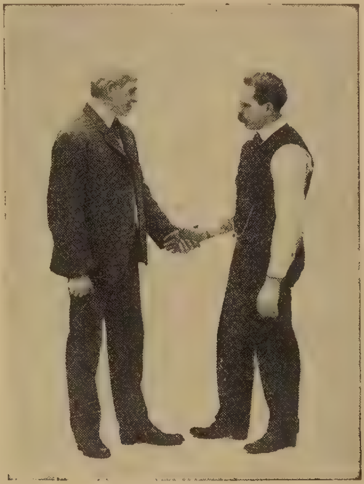
LESSON E. POSITION No. 2.

Throw the coat over his shoulders, drawing your opponent's arm firmly together.



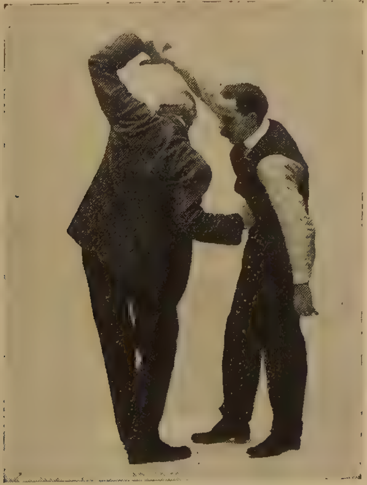
LESSON E. POSITION No. 3.

Step to right quickly, placing your left leg behind your opponent's left, giving a sudden push backwards and to the right will result in a throw.



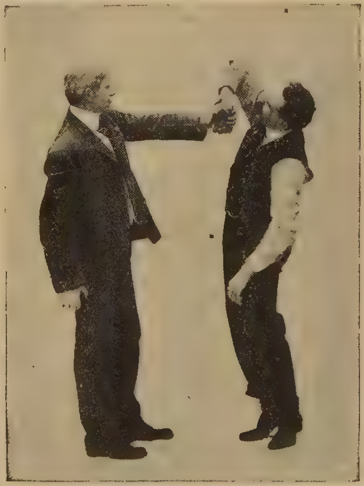
LESSON F. POSITION No. 1.

Grasp your opponent's right with your left so as your fingers will res in the centre of his hand and your thumb on the back of your opponent's, close to the wrist.



LESSON F. POSITION No. 2.

Raise your opponent's arm over your head, striking him in the solar plexus with your right, holding firmly with left, going under as indicated by the above illustration.



LESSON F. POSITION No. 3.

As shown by the above you have your opponent's right arm twiste and in a position where he is at your mercy.

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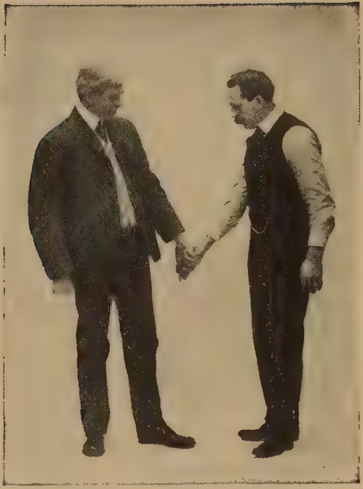
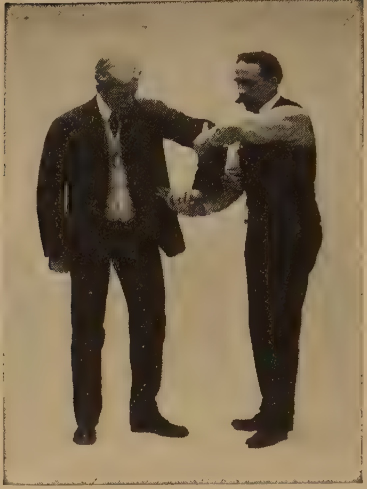


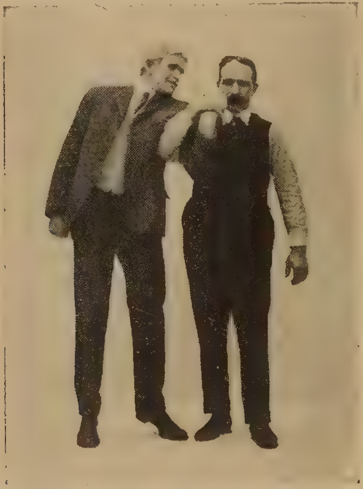
LESSON G. POSITION No. 1.

Place the four fingers of your right hand so they will rest firmly on
e ball of your opponent's left and your thumb on the back of his hand.



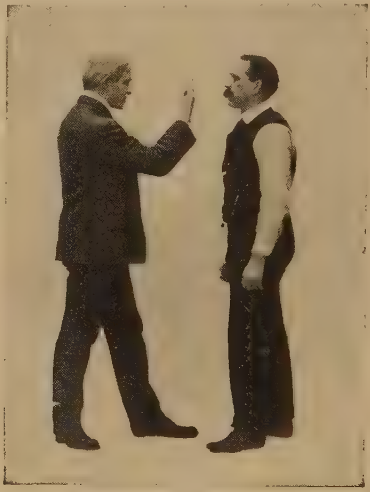
LESSON G. POSITION No. 2.

Place your left on your opponent's arm at the inside of the elbow, taking a firm hold turning up and inwardly, drawing the elbow back with your left, twisting the left hand upward with your right.



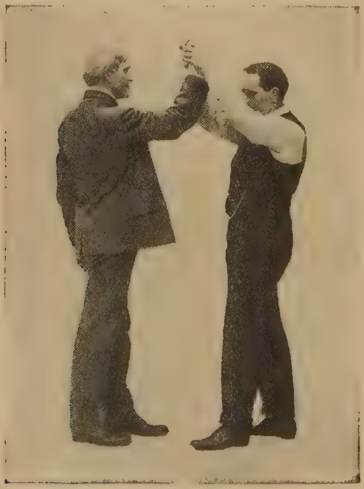
LESSON G. POSITION No. 3.

Until you have it in the above position turn to the left pressing down-
ard, using your left with your right if it becomes necessary.



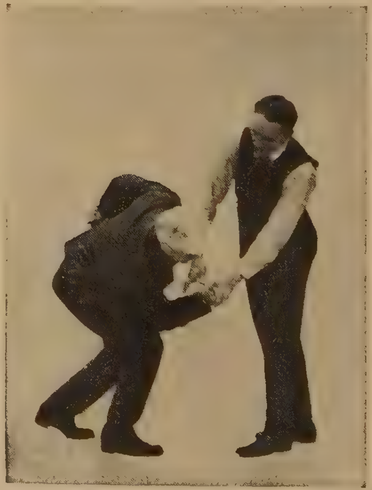
LESSON H. POSITION No. 1.

Should a person shake his finger in your face and about to strike.



LESSON H. POSITION No. 2.

ke a firm hold with both your hands so your thumbs will rest on the
ck of your opponent's hand.



LESSON H. POSITION No. 3.

Press the hand back with your thumbs and at the same time twist your opponent's hand to the left and downward.

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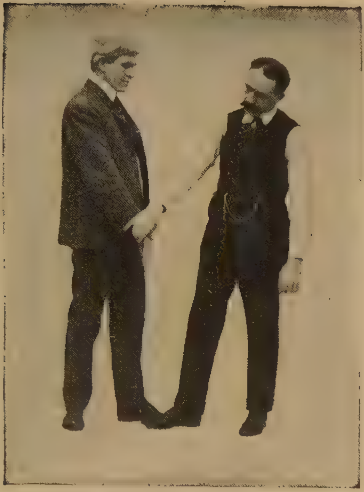
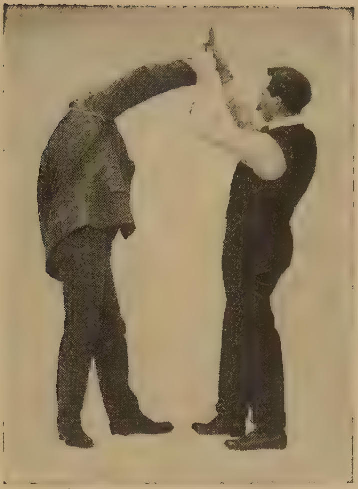


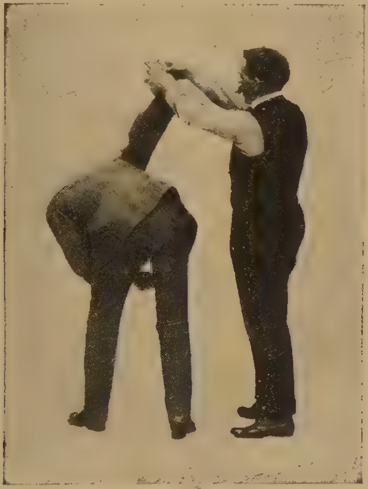
LESSON I. POSITION No. 1.

Take your opponent's right, using your right so that thumb will rest on the back of his hand and your first three fingers in the palm of your opponent's.



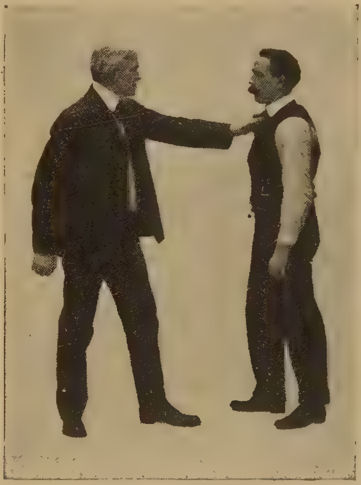
LESSON I. POSITION No. 2.

Step to the left; raise your opponent's arm, taking hold with both hands.



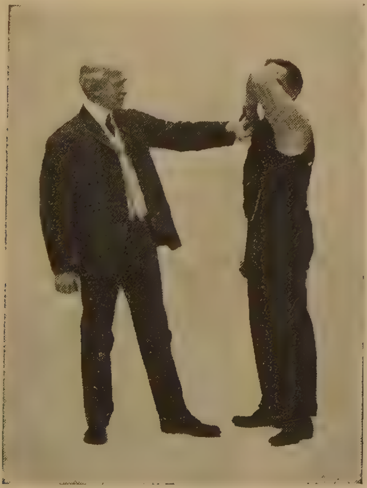
LESSON I. POSITION No. 3.

pressing inward and twist to the right. You should always keep your opponent's arm raised, which will cause him to bend forward.



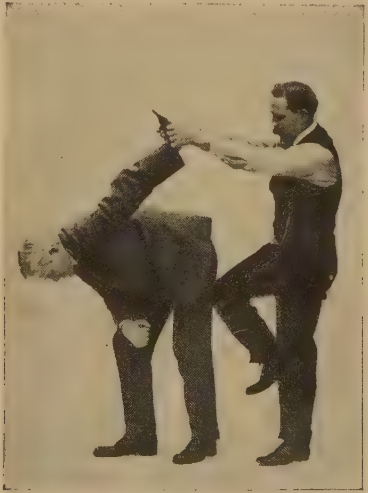
LESSON J. POSITION No. 1.

Should a thief reach to steal your pin or diamond stud on the street or in a public place,



LESSON J. POSITION No. 2.

use your left hand, placing your three first fingers firmly on his hand, forcing his arm to the left.



LESSON J. POSITION No. 3.

Take two steps to the right, holding your opponent's arm upward and you will have him at your mercy.

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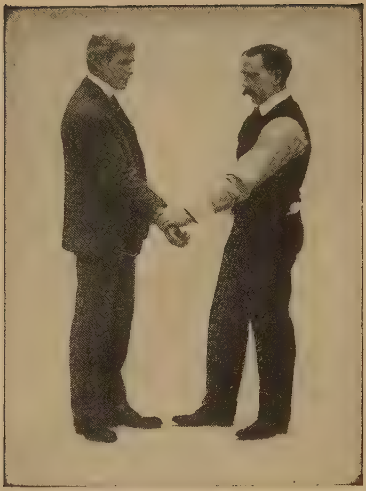
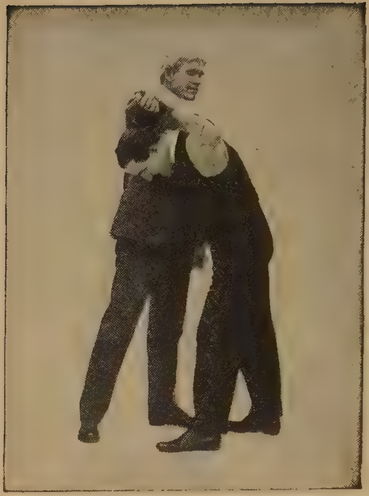


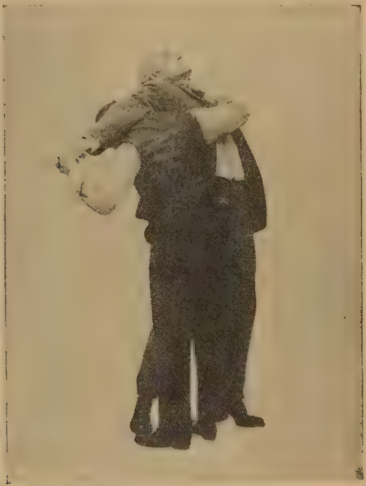
LESSON K. POSITION No. 1.

Take your opponent's right with your left firmly by the wrist as above illustrated.



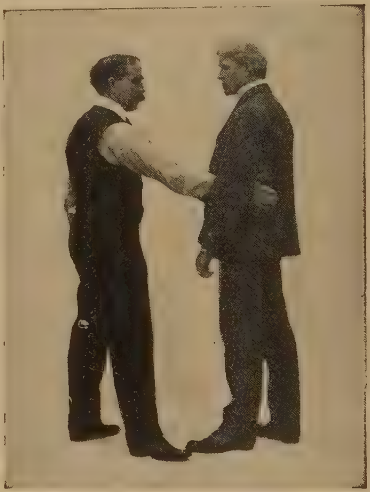
LESSON K. POSITION No. 2.

Twist your opponent's arm to the left as you are about to raise it; at the same time go under, holding firmly with your left.



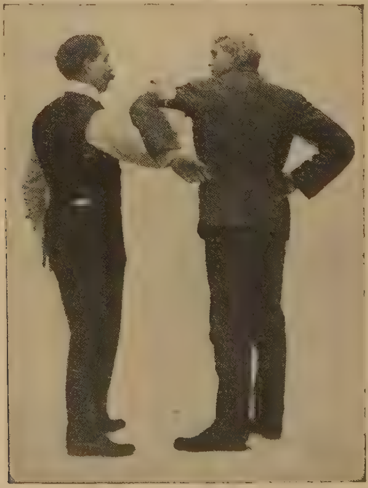
LESSON K. POSITION No. 3.

Place your right to your opponent's throat, taking a firm hold, pressing downward with your left; you can either choke your victim or break his arm.



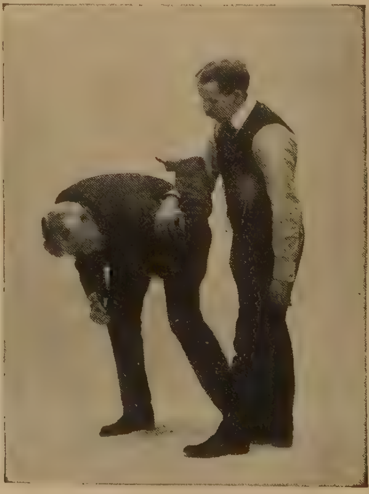
LESSON L. POSITION No. 1.

Place your right arm inside your opponent's left as above illustrated step to the right



LESSON L. POSITION No. 2.

and inward, raising your opponent's arm as shown above,



LESSON L. POSITION No. 3.

forcing your opponent's arm up, which will cause him to bend forward in great pain. He cannot resist.

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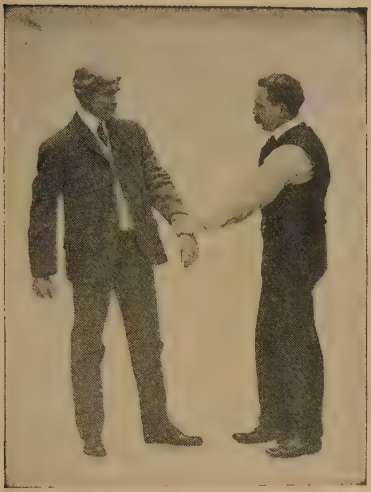
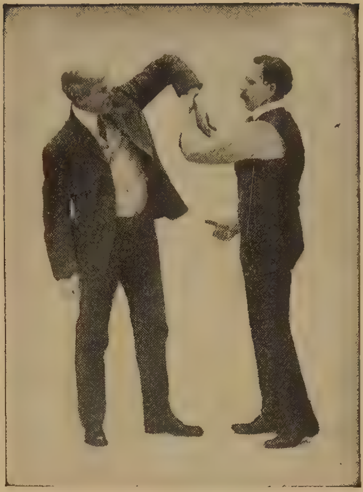


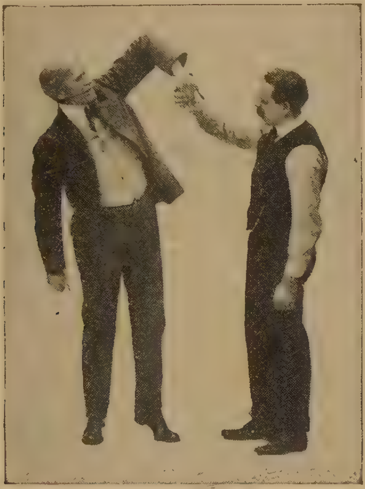
LESSON M. POSITION No. 1.

Take your opponent firmly by the left wrist with your left hand as shown above,



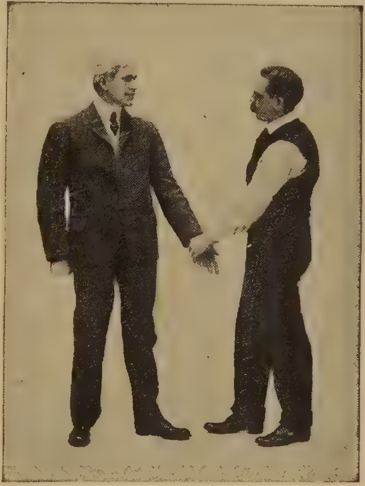
LESSON M. POSITION No. 2.

force your opponent's hand up and twist to the left, gripping firmly with your left, at the same time have your right ready to



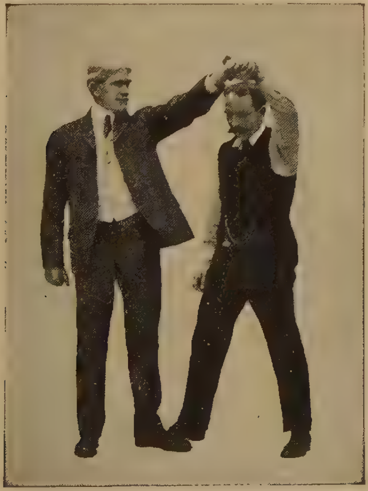
LESSON M. POSITION No. 3.

take hold of your opponent's left hand as above shown. You can then twist his arm at your will, which is very painful.



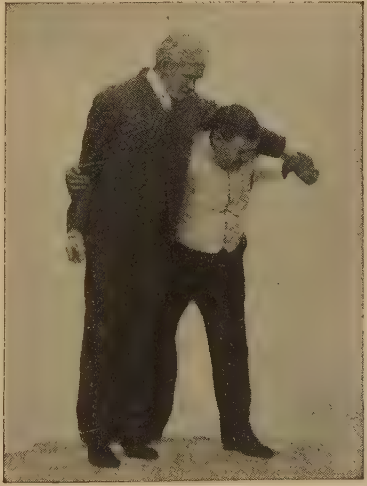
LESSON N. POSITION No. 1.

Take your opponent firmly by the left, using your left so that the ball of your hand will rest on his



LESSON N. POSITION No. 2.

Twist your opponent's arm to the right, raising it over your head, grasping firmly.



LESSON N. POSITION No. 3.

Go under, at the same time grasp your opponent's right arm with your right hand, holding firmly and pull down with your left. Your victim cannot resist.

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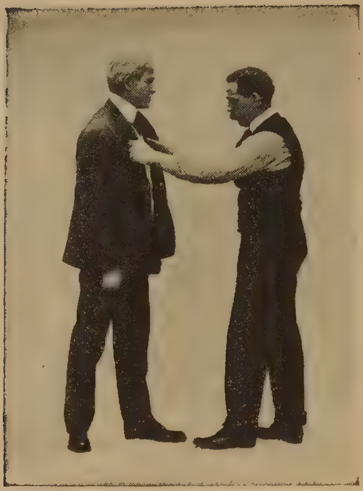
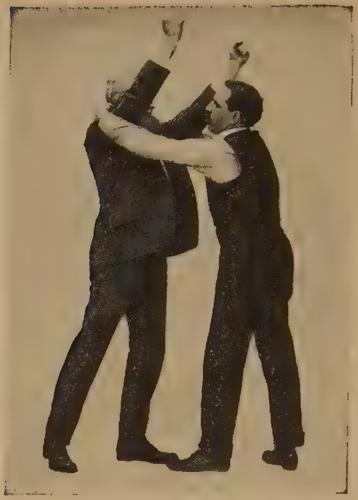


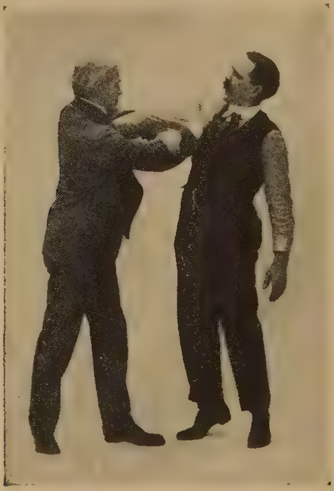
LESSON O. POSITION No. 1.

Should a person take hold of you by the lapel of your coat, with the intention of doing you bodily harm,



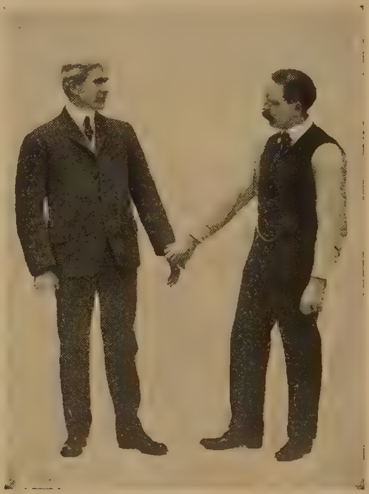
LESSON O. POSITION No. 2.

force your arms up between your opponent's. This must be done quickly and step forward.



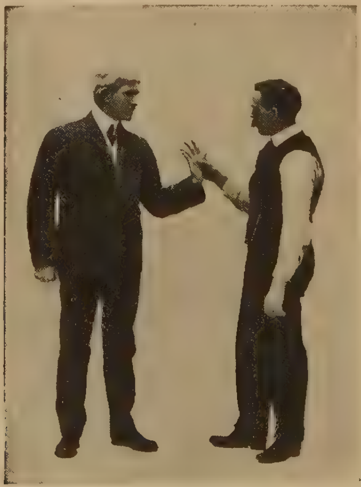
LESSON O. POSITION No. 3.

Bring your left arm outside and under your opponent's right, placing your right to his shoulder and your left firmly on your right, which will cause your opponent much pain.



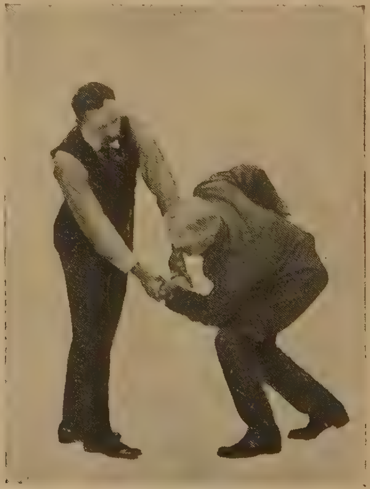
LESSON P. POSITION No. 1.

Take your opponent's left with your right hand, allowing your thumb to rest on the back and your four fingers on the ball of his hand, holding firmly,



LESSON P. POSITION No. 2.

raising your opponent's hand up, pressing firmly with the thumb of your right hand,



LESSON P. POSITION No. 3.

and at the same time bring your left hand into play. You can throw your opponent at your will.

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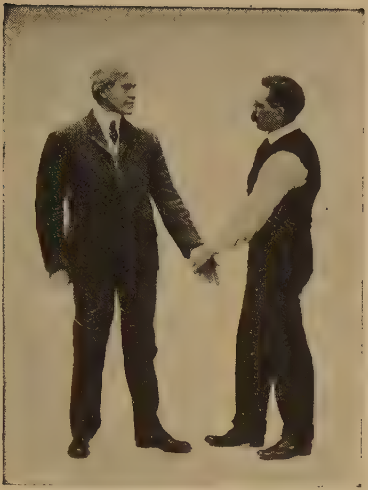
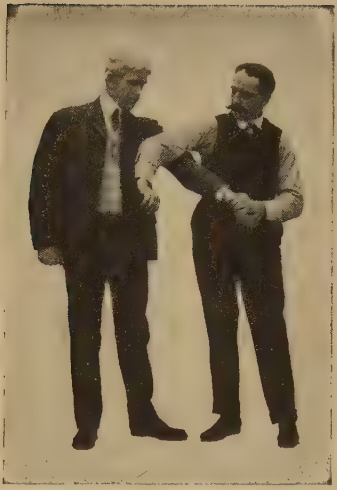
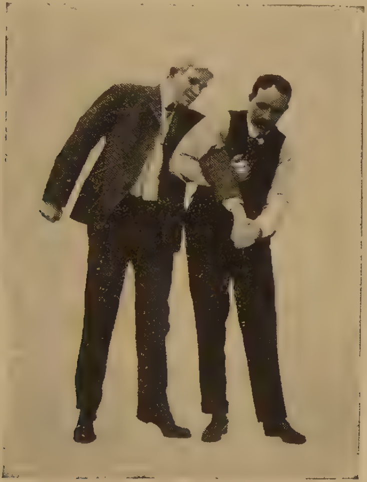

LESSON Q. POSITION No. 1.

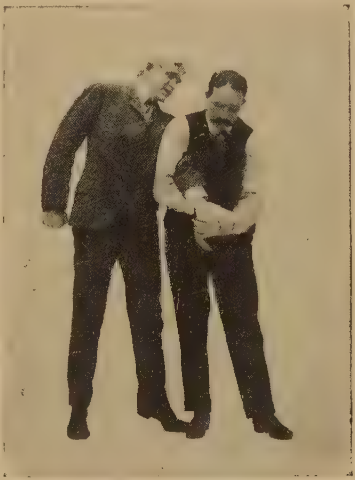
Take your opponent firmly by the left, using your left so that the ball of your hand will rest on his.


LESSON Q. POSITION No. 2.

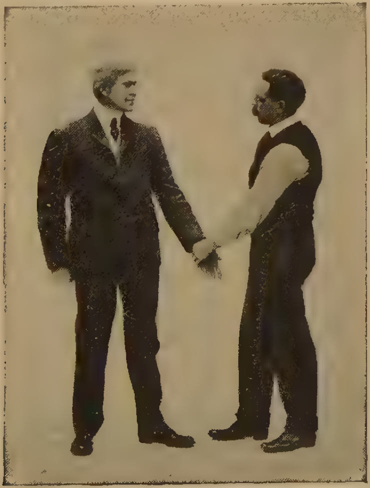
Raise your opponent's arm twisting his wrist outward, placing your right arm over his.


LESSON Q. POSITION No. 3.

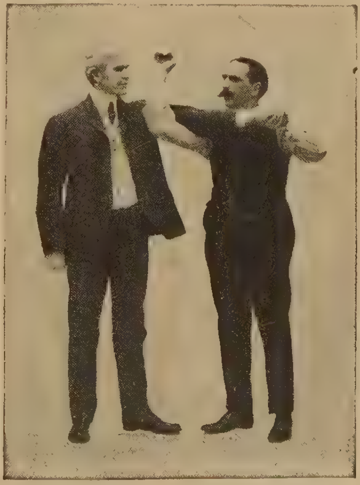
bringing your right around his left, firmly pressing down with your left hand, and at the same time twist the wrist.


LESSON Q. POSITION No. 4.

Should your opponent try to resist, you can bring your right hand down to your left wrist, which will make a firm hold that cannot be broken.


LESSON R. POSITION No. 1.

Take your opponent firmly by the left, using your left so that the ball of your hand will rest on his.


LESSON R. POSITION No. 2.

Raise your opponent's arm with your left, twisting inward. Place your right under his left and up,

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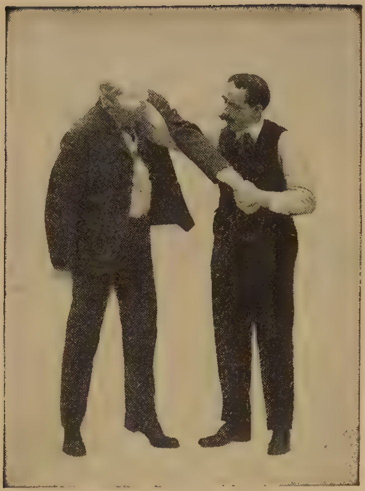
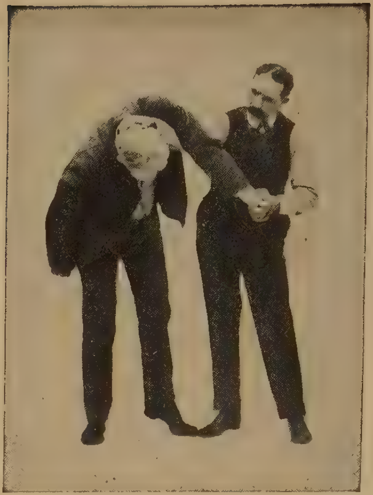


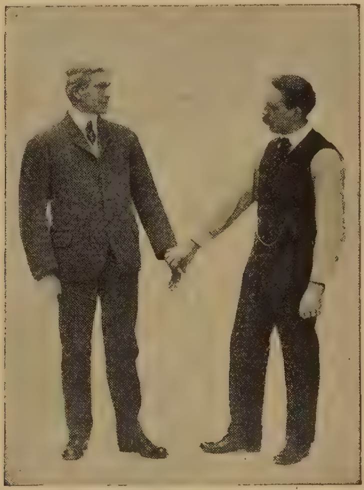
LESSON R. POSITION No. 3.

Placing your right at the back of his head, taking a firm hold.



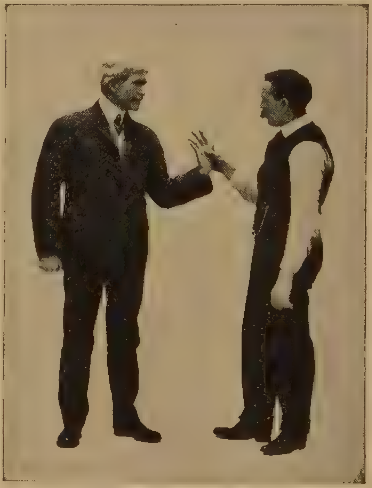
LESSON R. POSITION No. 4.

Pressing down with your left and twisting your opponent's wrist in ward, force his head down with your right.



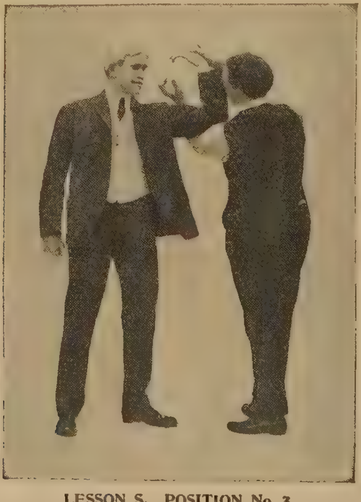
LESSON S. POSITION No. 1.

Take your opponent's left hand with your right. Have the thumb rest on the back and your four fingers on the ball of his hand.



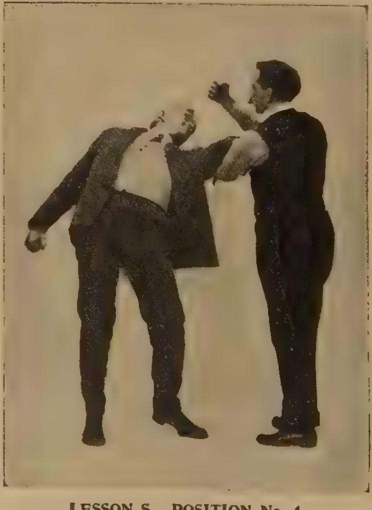
LESSON S. POSITION No 2.

Raise the hand as indicated above, turning your opponent's wrist to the right.



LESSON S. POSITION No. 3.

Hold firmly with your right and pass your left under the arm as above illustrated.



LESSON S. POSITION No. 4.

Grasp your opponent's left at about the wrist with your left. Pressing downward you then have your right free and have opponent at your mercy.

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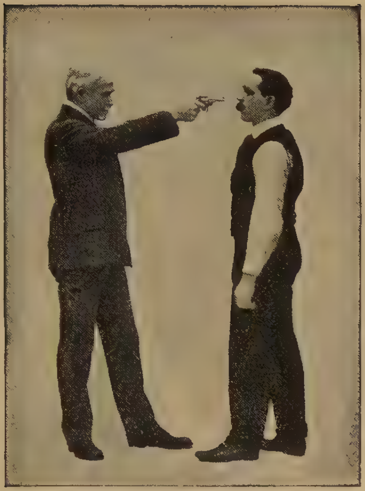
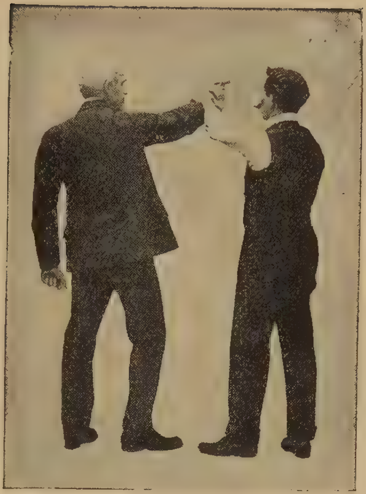


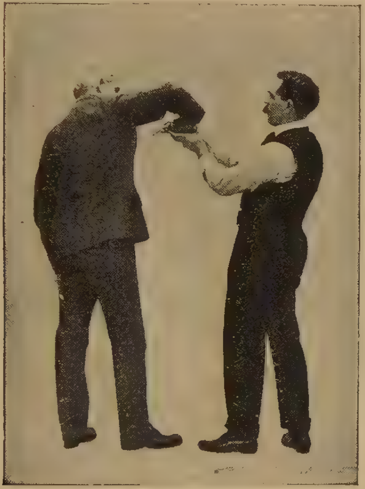
LESSON T. POSITION No. 1.

Should a person point a revolver in your face, to hold you up or otherwise, do not make a false move with either hand, keep cool.



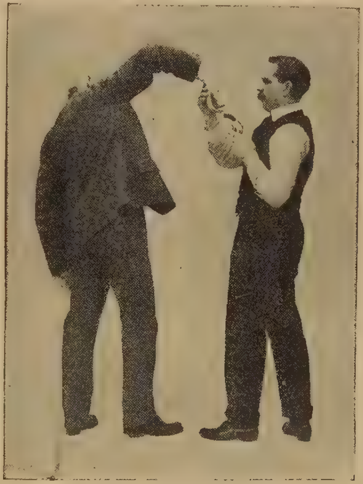
LESSON T. POSITION No. 2.

Direct your left to your opponent's wrist, forcing his arm to the right, hold firmly, then grasp the back of the hand with your right.



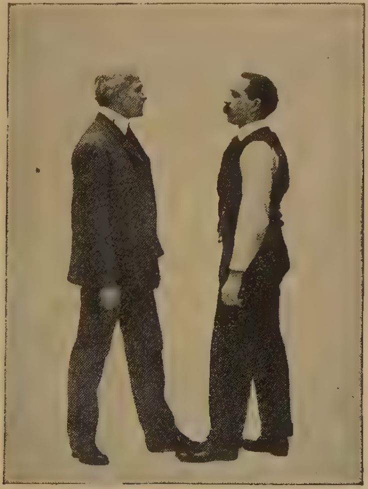
LESSON T. POSITION No. 3.

Hold firmly with your left, force inwardly with the right; this must done quickly.



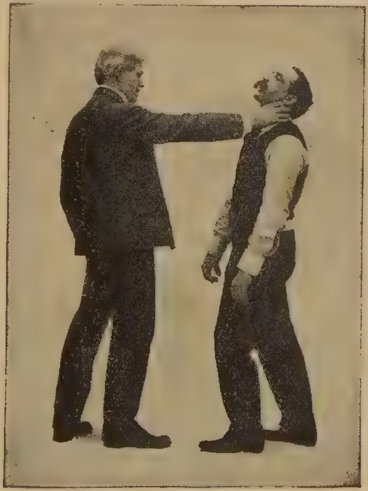
LESSON T. POSITION No. 4.

Turn your opponent's wrist with your right, holding his arm up. You can then take the revolver from him with your left very easily. N. B. This should be practised by removing chamber from revolver.



LESSON U. POSITION No. 1.

Should you become involved in an argument and your opponent



LESSON U. POSITION No. 2.

grasps you by the throat, as above illustrated,

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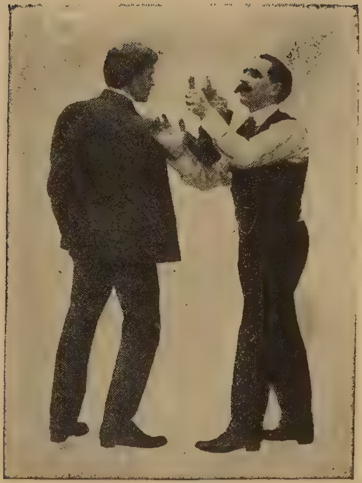
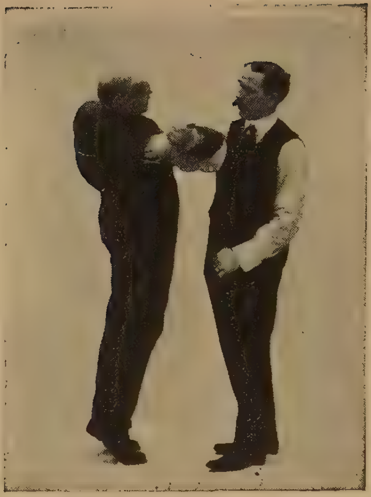


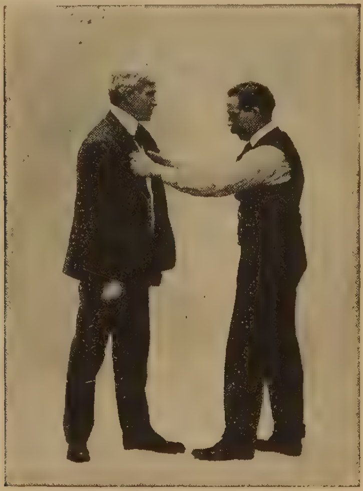
LESSON U. POSITION No. 3.

take a firm hold of his index finger with your left, draw his hand up and to the left, run your right under his left arm.



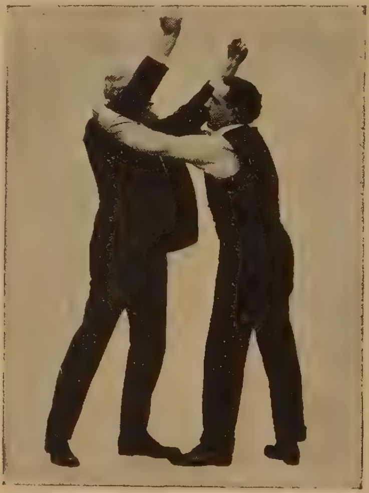
LESSON U. POSITION No. 4.

Place your wrist over your opponent's as above illustrated, pressing firmly down with your right. You have then reversed the positions and have your opponent at your mercy.



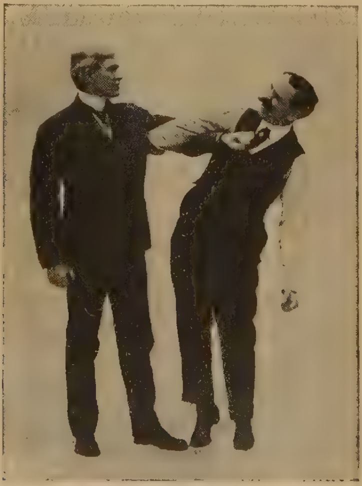
LESSON V. POSITION No. 1.

Should a person grasp you by the lapel of your coat as above illustrated,



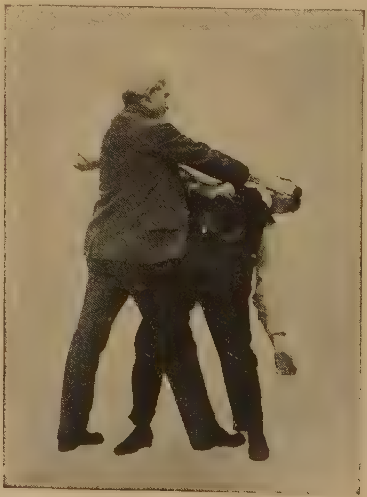
LESSON V. POSITION No. 2.

run both up between your opponent's. This must be accomplished quickly



LESSON V. POSITION No. 3.

Wind your left around your opponent's right, taking a firm hold on his lapel.



LESSON V. POSITION No. 4.

Step to the left and follow up closely, place your right to your opponent's chin, pressing firmly.

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BED GYMNASTICS

BEAUTY is one-third "*gift*" and two-thirds "*care.*" No person can possess or retain a good figure or complexion by taking their exercise in a rocking-chair. Proper exercise means effort and proper effort brings rich reward — not in a day or week, but after a month of steady and regular exercise, a change for the better takes place — then it becomes a habit and shows such an improvement in all-round health and vitality, we wonder how we have ever lived without it.

The best time for exercising is just after awakening in the morning, when the body has been refreshed by a night's sleep, when all the organs and the nerves and muscles have been rested after the work of the previous day.

An eminent physician has originated a series of exercises which he terms "Getting-Up Exercises" or "Bed Gymnastics," because they should be performed immediately upon awakening and some of them on the bed. First on the programme comes a series of breathing exercises to be done as follows:

Lie flat on the back, putting pillow, bolster and bed-covering aside. Stretch the arms and legs straight out (as in plate No. 1), inhale through the nose and distend the abdomen, so that the diaphragm sinks.

Exhale through the mouth, drawing in the abdomen as far as possible.

Inhale as the abdomen is expanded.

Draw in the abdomen and at the same time expand the chest by flexing the breathing-muscles.

Exhale slowly through the mouth, allowing the chest to sink.

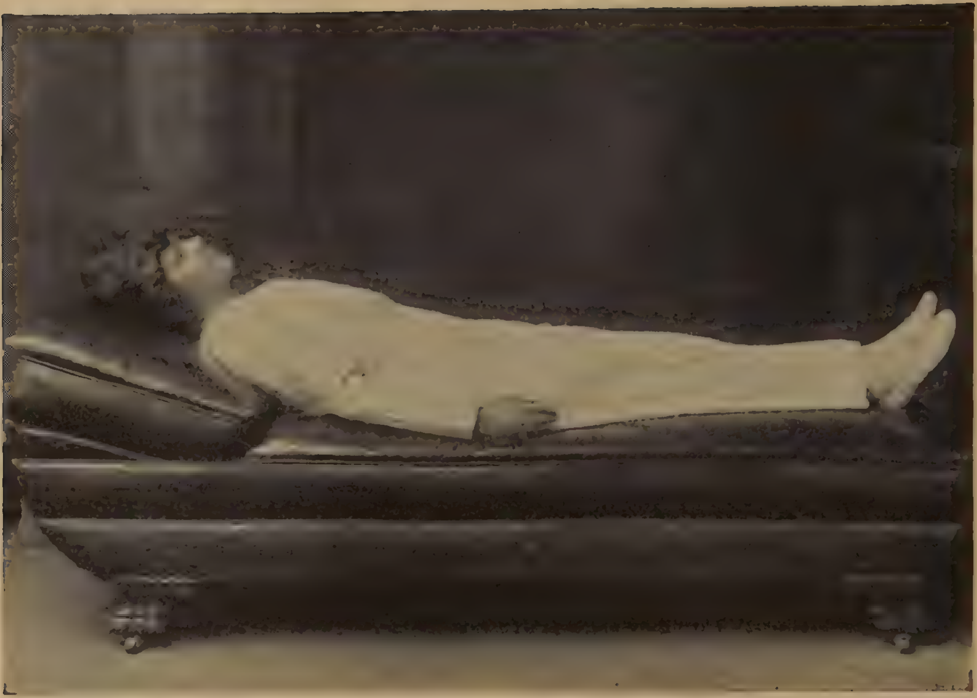
Expanding of the sides (flanks).

Indrawing of the sides by inhaling through the mouth and exhaling through the nose.

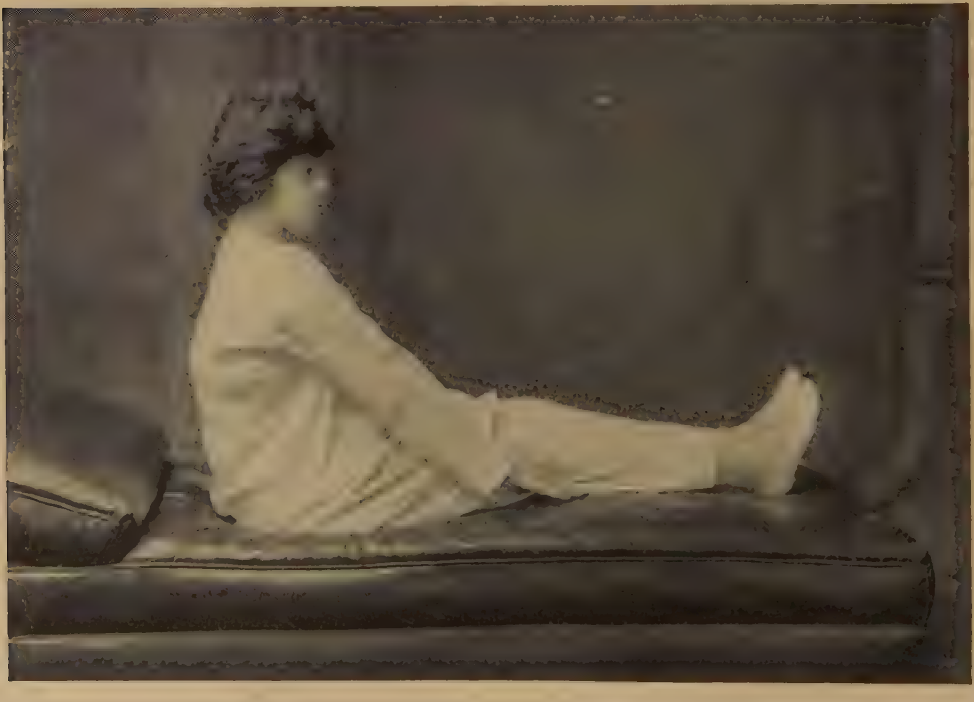
Each of these exercises should be repeated from five to ten times, with the windows open. The breathing should be slow and deep and regular. Especially in exhaling, every effort should be made to let the breath pass out in a steady stream, until as much as possible has been expelled.

These exercises must be taken up gradually, so as to avoid all strain or weariness. Whoever has not been accustomed to inhaling and exhaling deeply will at first feel a sensation of dizziness, but this will cease after a few days. These breathing exercises not only help to develop the muscles of the chest, but force the dead air from the lungs and fill them with good, pure air.

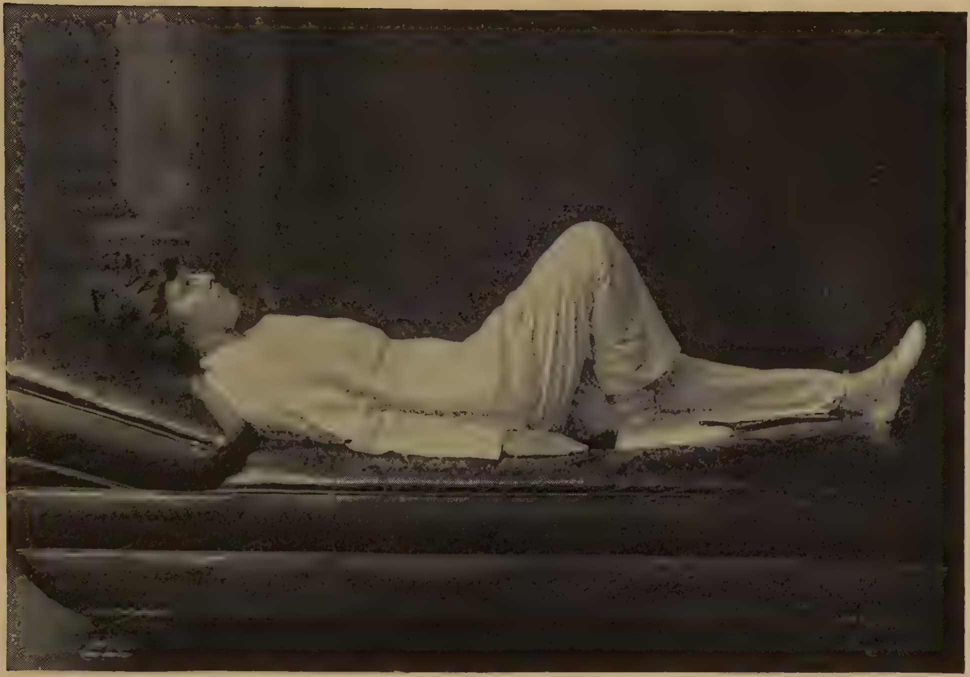
After these exercises have been conscientiously practised and become more or less easy, the real gymnastics begin as follows:



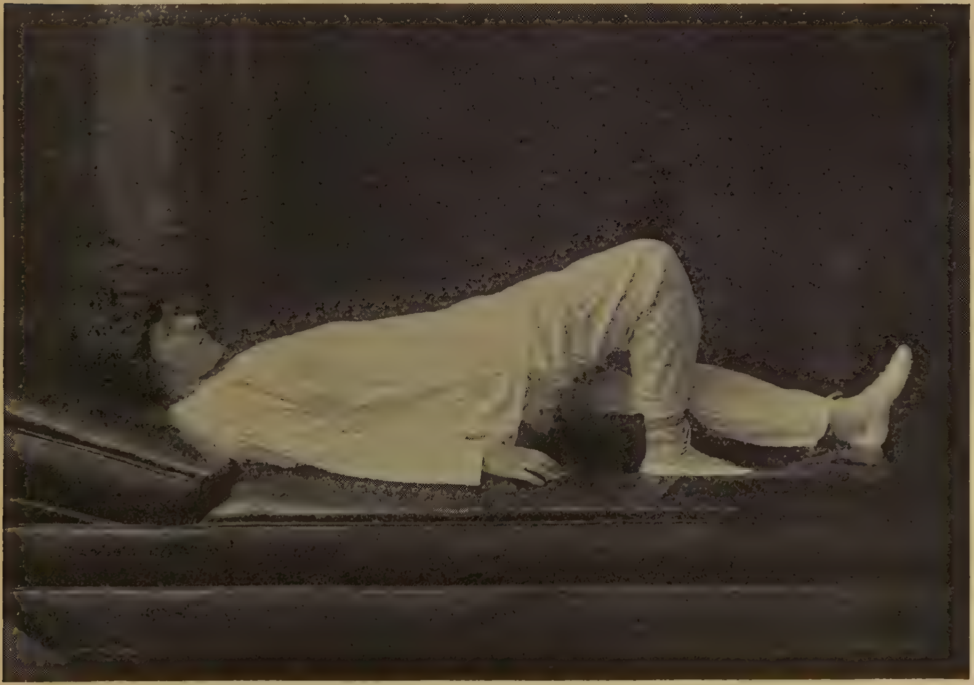
No. 1. Exhale through mouth, drawing in abdomen far as possible; then inhale through nose as abdomen is expanded (ten times).



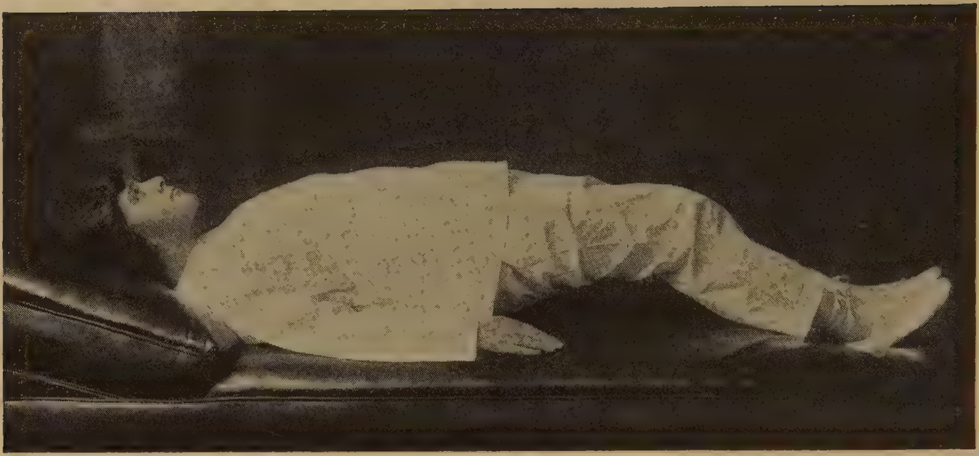
No. 2. Sit up slowly, without help of hands, until quite erect, the legs stretched out straight on the bed: then sink back slowly to a reclining position, sitting up again as before (ten times).



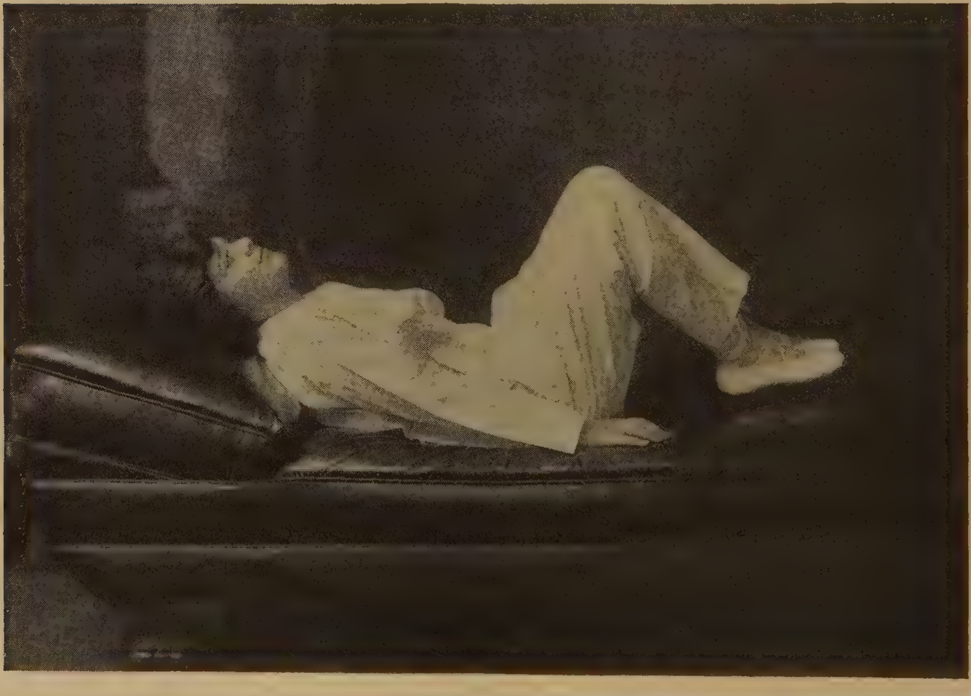
No. 3. Reducing hips and strengthening abdominal muscles. Bend knee with foot flat on bed.



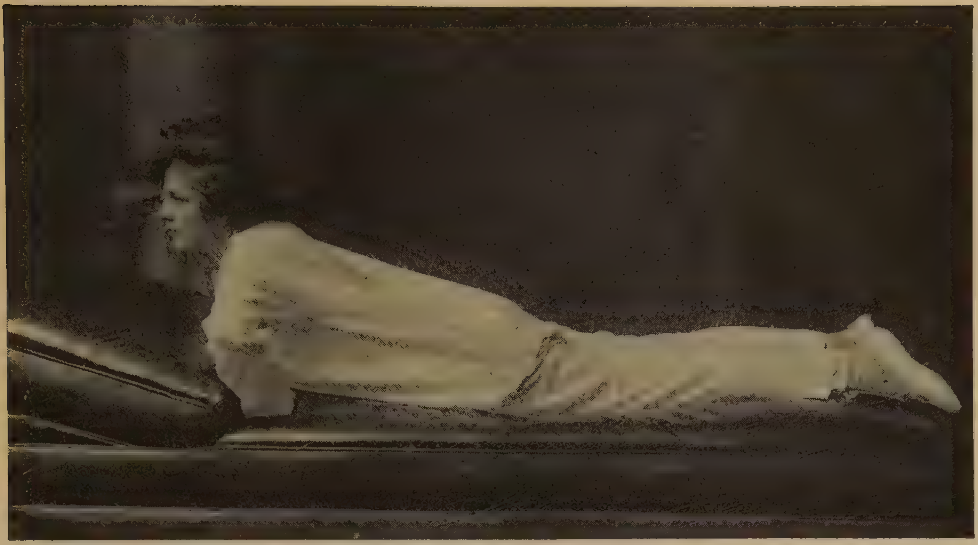
No. 4. Raise hips off bed, then lower again. Repeat with left leg same position (ten times).



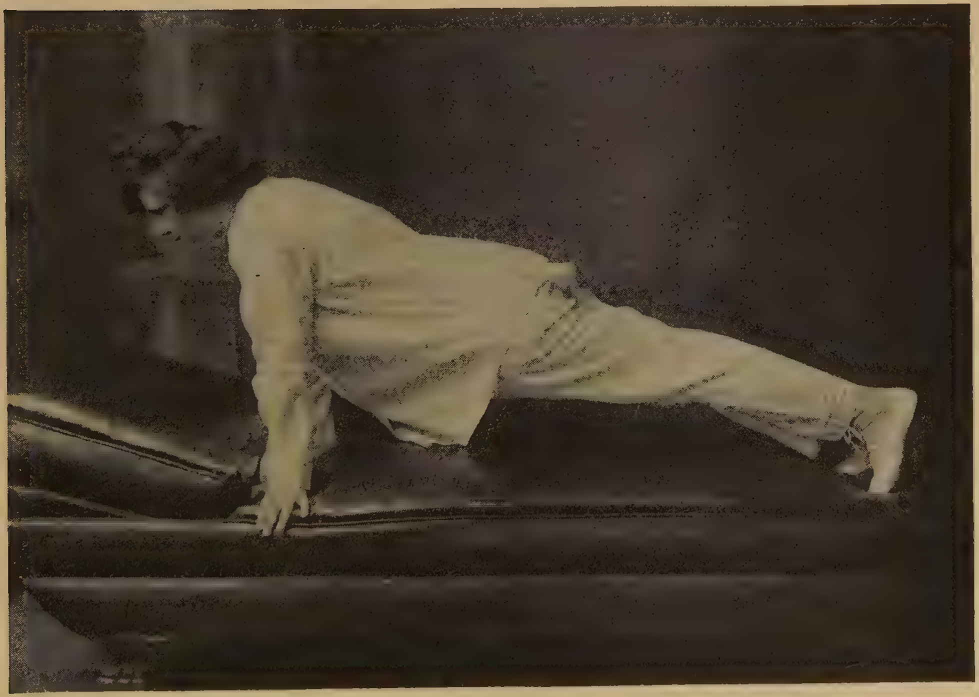
No. 5. Lying flat on back with hands extended; form a bridge of the body (ten times).



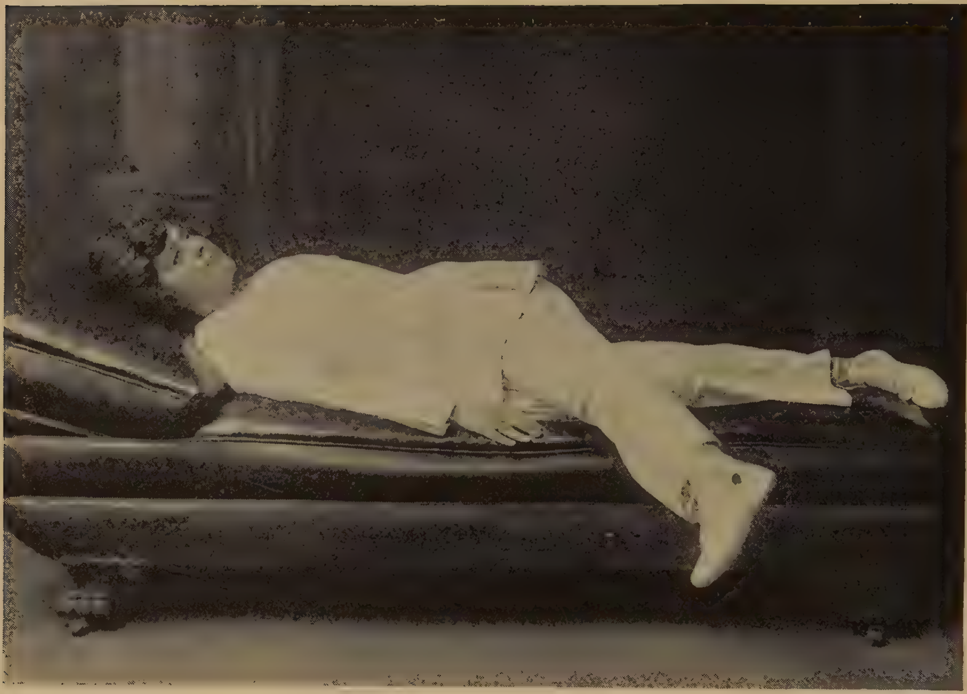
No. 6. Draw up both legs together as far as possible towards the trunk, then extend legs to full length (repeat ten times). This exercise with No. 5 is excellent for reducing hips and abdomen.



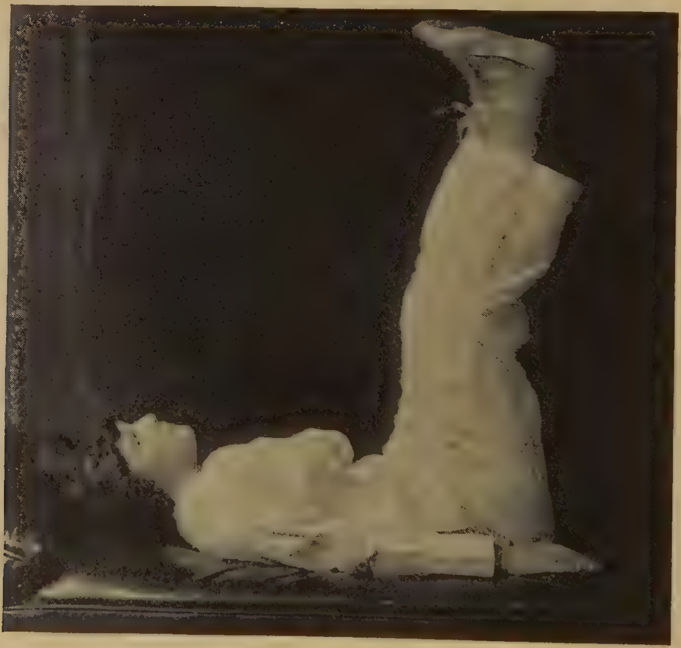
No. 7. Lie on the stomach, placing the elbows out; then raise the body as in No. 8.



No. 8. In raising the body, turn the hands out; then lower the body again to original position (5 times). This exercise strengthens the arms, back, and chest.



No. 9. Twist the left leg in a circle ten times, keeping the trunk of the body quiet; then repeat with the right leg.



No. 10. While lying on the back, first raise the left leg slowly, stretched to full length, five or ten times. Repeat with right leg; then raise both legs together, knees touching.

The Whitely Exerciser.

As this method is introduced with the strictly American idea of furnishing "the shortest route and fastest time" to health and strength, you may expect some radical departures from older methods.

After your regular day's work is ended, you are not asked to do another each evening, performing feats of strength which tax your endurance to the utmost, and leave you "all broke up" the next day. It has been demonstrated that heavy gymnastics, like numerous other ponderous and unwieldy things of the past, are by no means the best. On the contrary, exercises that admit of numerous movements of the muscles WITHOUT GREATLY TAXING THE VITAL FORCES, produce larger development and better quality. Muscular tissue built in this way is not only strong, but quick and active, while that developed with heavy weights is hard and slow.

You are not required to waste time in the preliminary study of an intricate system of movements. For brain-workers, a system that requires study is directly at variance with one of the prime objects of muscular exercise, namely, entire relief from mental strain. But, if you don't have to think, it is because someone has done it for you; for the exercises, howbeit simple, are scientifically arranged to bring into action every muscle in your body.

Dumb-bells and Indian clubs exercise the muscles of the arms and shoulders but do not reach the muscles that pull the arms downward.

The Whitely Exerciser is at once complete, compact and noiseless; requiring no floor-room, no changing of weights, for it adjusts itself to any degree of resistance; no buckling of straps or other paraphernalia; can be put up in two minutes without the use of a single tool, and if desired can be removed from the hooks and put out of sight in a moment and readjusted for use just as quickly. It imparts an easy, gliding motion, necessary to successful development.

It is equally adapted to ladies, gentlemen and children.

Directions for Putting up. — The Exerciser will work at any angle, so select any place in your room that permits an unobstructed floor space in any direction. Better work toward a window that will permit of ventilation from above than away from it.

Standing on an ordinary chair, screw two hooks into the door or window-frame on a level with your nose and from two to six inches apart as best suits the form of the woodwork; lower hooks two inches from the floor, or in the floor if you are short of stature.

Should there be a sill or other obstruction to be avoided, put the lower hooks in the floor at sufficient distance from the wall to make the cords clear the obstruction.

The middle pulley is purposely made without a swivel to prevent twisting of the cord when in use, so run out any twist between it and the pulleys attached to the triangle before putting it on the hook. The pulleys on the triangle are swiveled that the Exerciser may adjust itself to any movement or work in any direction, and if the cords twist together between them and the handles a pull on the latter will untwist them.

The rubber cord, or rather cable, is calculated to withstand unlimited use and a much greater tension than required for ordinary exercise, but don't, on that account, abuse it unnecessarily.

Don't use a cord that is too strong for you. If you do you will be exhausted but not benefited by your exercise. The cords are made of various strengths, be sure you obtain one adapted to you; that is, one that pulls easily when close to the Exerciser. As you grow stronger, you have only to stand a little further from the Exerciser to obtain a resistance suited to your increasing strength.

It is not how much you pull, but how often, so use no more force than is agreeable.

If your exercise is too vigorous or too heavy, you will be exhausted before you can complete it. It is better to exercise all parts of the body a little than a few much. If you are sick or weak, exercise very moderately, and stop the moment you feel the least exhausted. If well and strong, be moderate for the first week or two, or exercise will make you sore. When a muscle is tired it hurts, and to force it beyond that point is harmful.

Exercise when you have time for it. Not for an hour after meals, certainly, unless it be very moderately. After eating, your stomach needs all your force, and much of your blood, which under exercise would be drawn to the muscles.

Perhaps the most convenient time to exercise is just before retiring, as it puts the body and brain in condition for refreshing sleep. Sedentary people should keep the apparatus in the office, if possible, to exercise when they feel the need of it,—that is when your brain is tired, and your thoughts refuse to flow freely. A little vigorous exertion will renew the supply of blood in the brain, and with new blood will come clear thought and new ideas.

A tired feeling is not always due to exhaustion; it is more frequently due to congestion of the blood in some particular spot, and is quickly dispelled by exercise. Make the attempt, but if the tired feeling does not soon disappear, you will understand that it is true exhaustion for which sleep is the only remedy.

Make up your mind that you will exercise, be it midnight or morning, when you retire, and you will be repaid for it in the quality of sleep that follows; though at such times, unless excited, it is well to somewhat curtail the amount of each movement, or you will tire before you finish the list. At such times, also, some regard to the muscles that have beeen used during the day is advisable; but when you have time to exercise each group of muscles completely, this matter will regulate itself, for those that have been used during the day will tire sooner than the others. Nature puts a limit to muscular development, beyond which no amount of exercise will force it, and it is therefore only necessary to exercise all the muscles regularly, to eventually bring the entire body to a symmetrical shape, and the highest stage of development.

If practicable, take your exercise in the condition indicated in the cuts; for at least once a day the body should be free to act without restraint of clothing, and moreover, fresh air is a tonic to the skin which lessens your chances of taking cold.

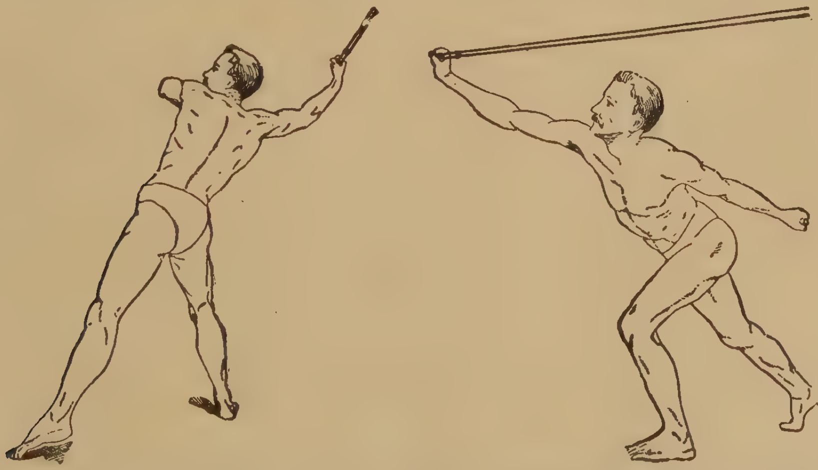
Fresh air is an indispensable adjunct to exercise, but the room should never be chilly.

Never exercise beyond the ability of the heart to keep pace with you; palpitation is a sure indication of excess. Exercise only as vigorously as is agreeable, and in keeping with your strength.

Do not exercise long or hard early in the morning, as it is apt to exhaust you before the vital forces are fully aroused, and you do not recover during the day. If you rise as late as half past eight or nine, vigorous exercise is not likely to hurt you, unless you bolt your breakfast, and rush off to work immediately following it.

In making the movements, endeavor to forget you are exercising, and, if possible, imagine you are doing the things the movements indicate.

Exercise No. 1. — *Throwing.* Suspend the apparatus as in position No. 4, grasp the handles with either hand, and make a movement exactly as though throwing a ball or light stone. Having tired the muscles on one side, change to the other and repeat the movement until that side is tired, also.

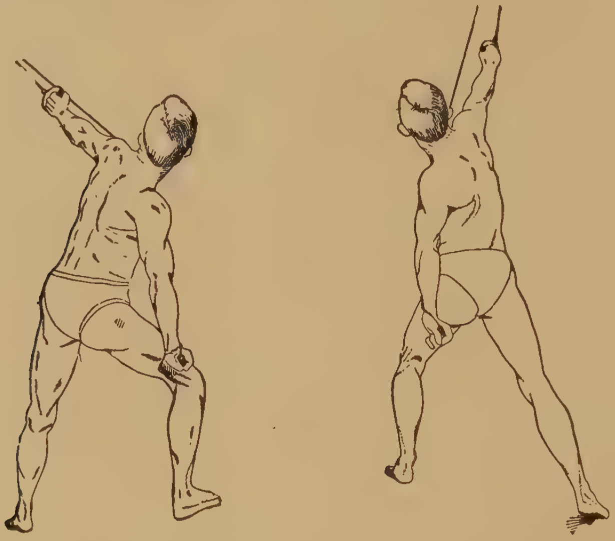


This movement brings into play the muscles in front of the neck, the large muscles on the front of the chest, the muscles on the front and side of the abdomen, nearly all the muscles of the legs, and broadens the chest. Draw in the breath as you take the first position, and blow it out forcibly as you make the movement.

If the tension is not strong enough with one handle, it may be doubled by taking both in one hand.

Before releasing your hold on the handles relax the tension and give the cords time to untwist. If oiled the swivels will revolve without assistance.

Exercise No. 2. — *Hoisting.* — Take a handle in each hand and make a movement as though hoisting a bucket of pitch or gravel to the roof of a high building.

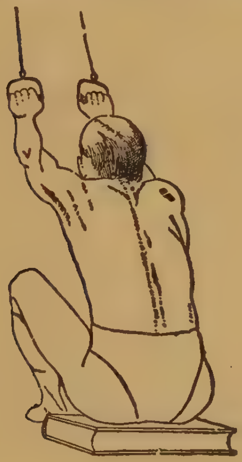


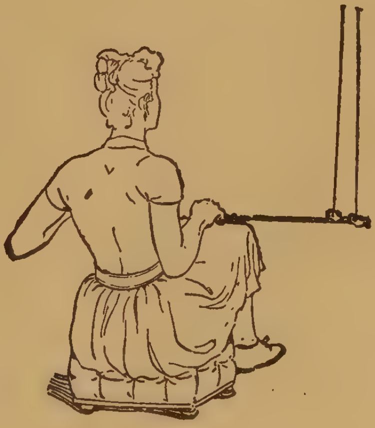
This exercise brings into action the muscles on the sides of the neck, muscles of the fore-arms, back-arms, muscles of the back that draw the shoulders together, side muscles, and muscles on front of thighs. In making this movement, endeavor to send the "bucket" as high as possible at each sweep of the arm. In doing so, you will draw the arm back and around in a way that is necessary to develop the particular muscles which this movement is intended to reach.

Take in the breath as one hand is drawn down, and as the other comes down, expel it.

Exercise No. 3. — Suspend Exerciser as per cut, and use each hand alternately. This exercise strengthens the muscles of the arm, shoulder and thigh. Another exercise is made by turning the back to the Exerciser. Putting the cords over the shoulders, hands on back, then bend forward and back. This movement is particularly intended to reach the large muscles on the front of the chest and abdomen.

Exercise No. 4. — *Swimming and Rowing.* — Exercises the muscles used in swimming or rowing, that is, the large muscles of the back that pull the arms downward and backward. This movement may be made sitting or standing. If made sitting, it is well to spread the

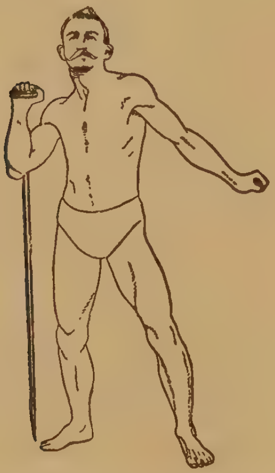


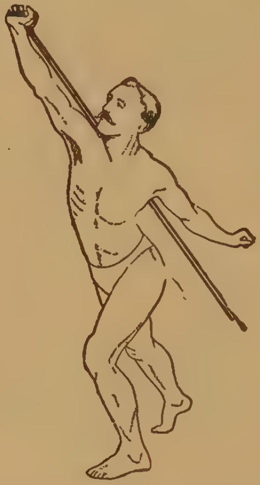


knees as you draw the arms down, and as the arms go up, bring them together. This latter part of the movement exercises the muscles on the inside of the legs which are much used in swimming. Draw in the breath as the arms go up, and expel it as you draw them down.

This movement is a good chest-expander.

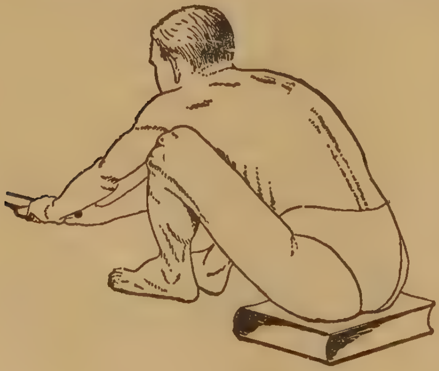
Exercise No. 5. — *Putting the shot.* — Shift the apparatus to position No. 6. Grasp the handle in one hand, and make a movement as though throwing a heavy stone or shot. Draw in the breath as you begin the movement, expel it as you finish. When the muscles of one side are tired, change to the other and repeat the movement.



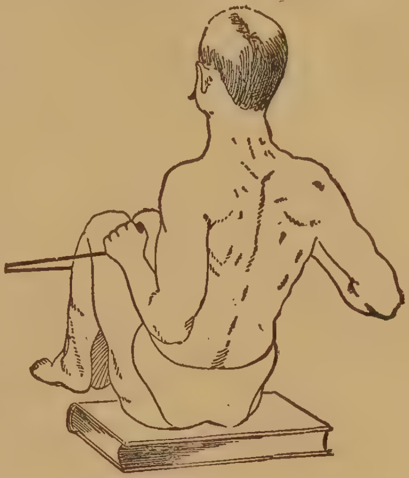


The exercise expands particularly the upper portion of the chest, exercises the fore-arm and biceps, or front muscles of the upper arm, triceps, or back muscles of the upper arm, the upper portion of the large muscles on front of the chest, and muscles on side of shoulder; also the side muscles of the body, and nearly all the muscles of the legs and feet.

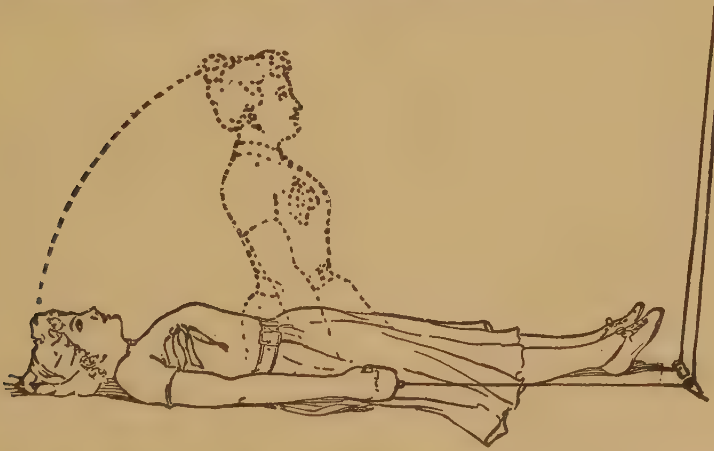
Exercise No. 6. — *Rowing.* — This movement may be made either sitting or standing, though it is better made sitting. With a handle in each hand, make a movement as you would in rowing: as the body goes forward spread the knees, as represented in the first cut, and as you go back, bring them together as shown in the second.



The breath may be drawn in either as the body goes forward or backward, but as a rule, in any exercise, it is better to take he breath before the exertion. In this movement be careful to draw the arms and shoulders well back; for rowing, as it is generally performed with the sliding seat, tends to contract the front of the chest. The movement made as indicated in the cuts, or in rowing without the sliding seat, overcomes that objection to the sport. In rowing, we use the muscles of the fore-arm, biceps, back muscles of the shoulders, nearly all the muscles of the back, and the muscles of the back of the neck have considerable to do. With the sliding seat, the muscles in front of the legs do much of the work, but as all the other movements exercise the legs, there would be nothing gained in having the seat for this exercise. In fact, the development of the muscles on the inside of the legs, as is done in the way the movement is here described, is much more to the point; for with the exception of exercise No. 4, these muscles have had little work.



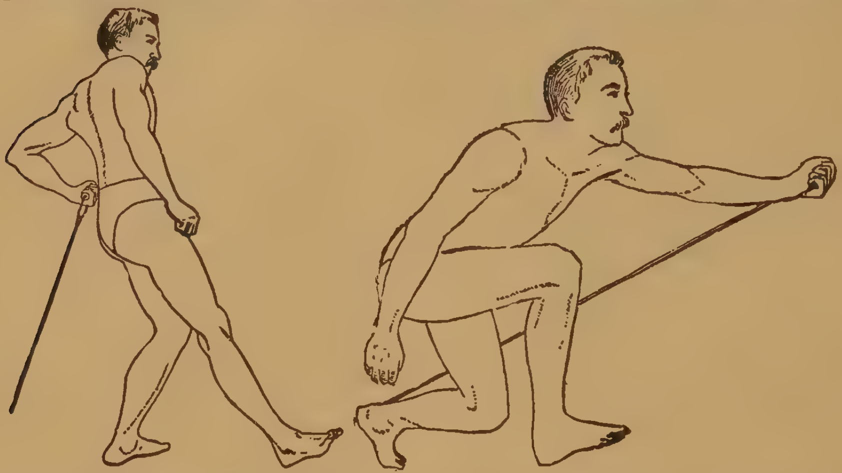
Exercise No. 7. — Lie down on floor. Feet to Exerciser. Lift hands straight over head, touch the floor and sink to hips. Raise body to sitting position without lifting feet from the floor.



This exercise plays particularly on the front muscles of the shoulders, and some muscles in the back, and is specially designed to strengthen the abdominal muscles.

Inhale the breath fully as the arms ascend, and expel it forcibly as they descend.

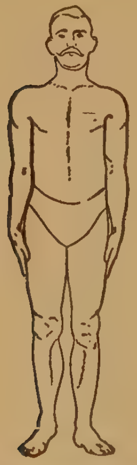
Exercise No. 8. — *Bowling.* — Suspend one handle again as in position No. 6; with the other hand free, make a movement as though

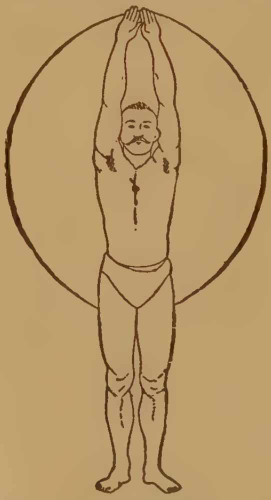


to throw a ball as in bowling. Draw in the breath and expel it in the forward movement.

This exercise develops the muscles of the arms and legs.

As a finishing touch, this old-fashioned exercise for expanding the chest is given. From a position with the hands down at the sides, raise the arms laterally to a position high over your head, keeping





the elbows straight. Inhale all the breath you possibly can as the arms go up; bring the arms down again to the position first indicated, but retain the breath for a moment after you have finished the movement.

PHRENOLOGY.

Each faculty of the mind has its separate or special "Organ in the Brain." By a thorough study of Phrenology we learn

How to improve ourselves;

Select our business or vocation;

How to train and educate our children;

And to obtain a thorough knowledge of our fellow-men—their character, abilities, or weaknesses.

The most important and useful of all learning.

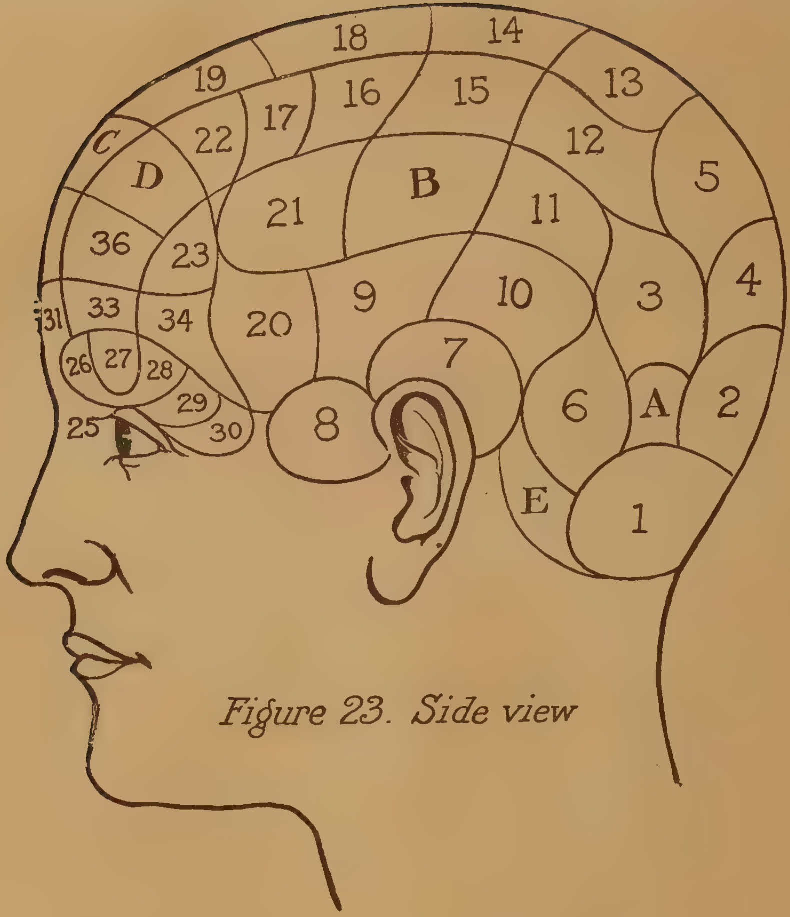
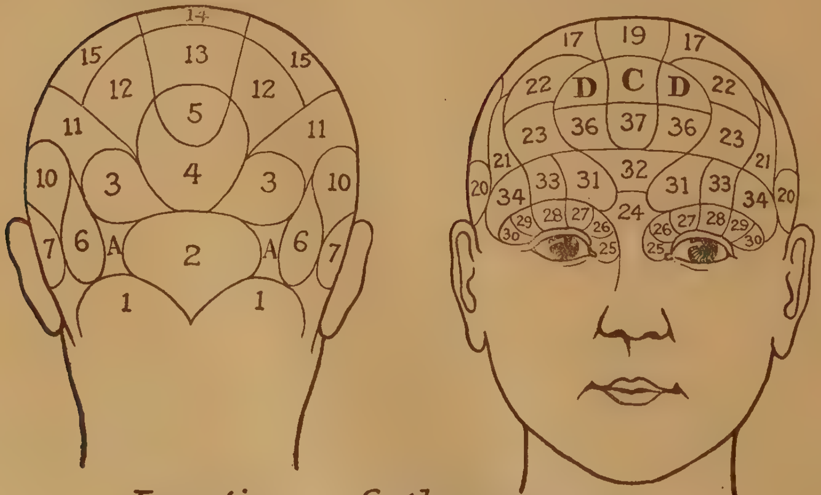
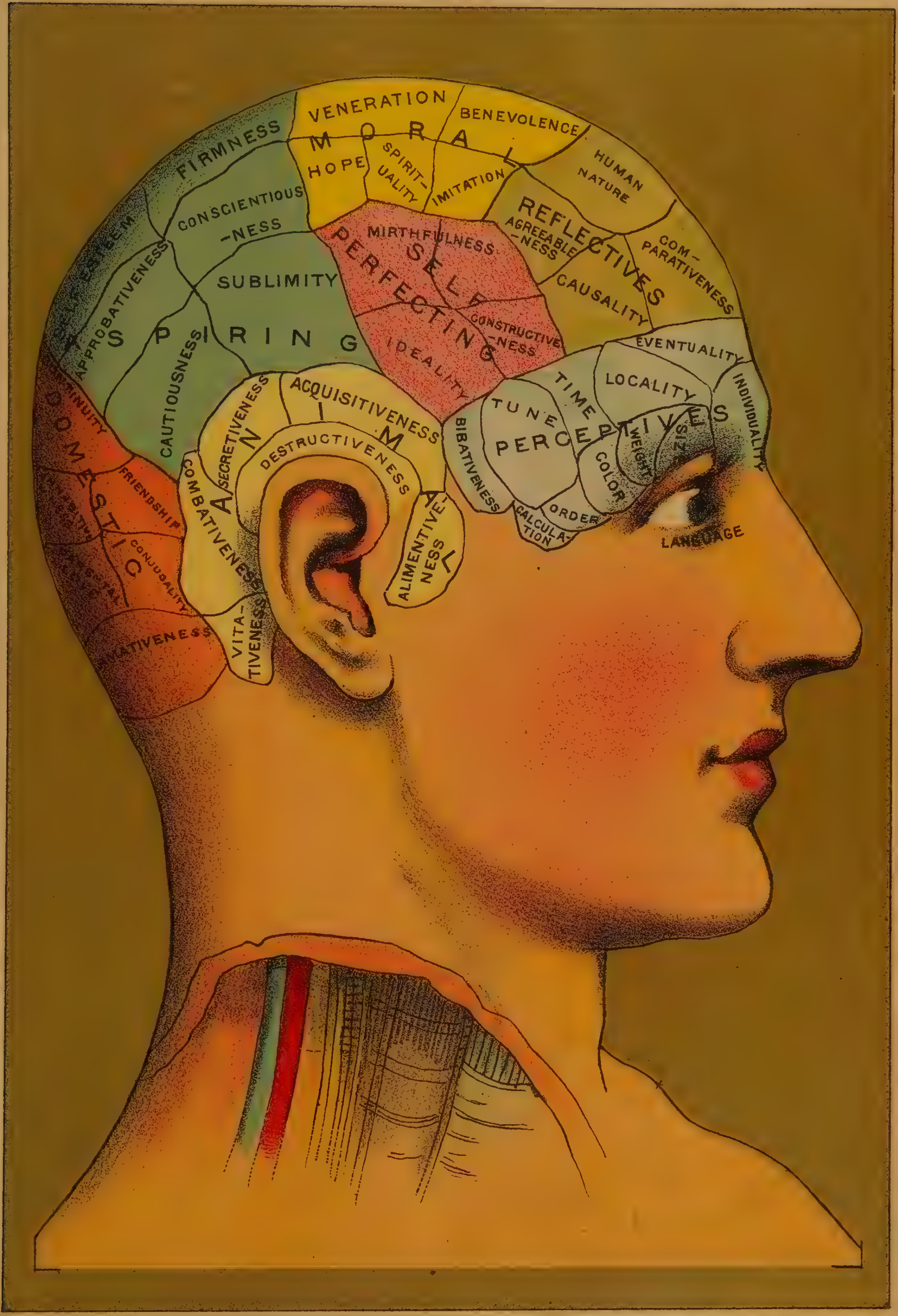


Figure 23. Side view


Back view

Front view

Location of the Organs.


VENERATION
BENEVOLENCE
MORAL
HOPE
SPIRITUALITY
IMITATION
HUMAN NATURE
FIRMNESS
CONSCIENTIOUSNESS
SELF ESTEEM
APPROBATIVENESS
SUBLIMITY
ASPIRING
CAUTIOUSNESS
MIRTHFULNESS
SELF PERFECTING
REFLECTIVES
AGREEABLENESS
COMPARATIVENESS
CAUSALITY
CONSTRUCTIVENESS
IDEALITY
EVENTUALITY
LOCALITY
INDIVIDUALITY
TIME
TUNE
PERCEPTIVES
WEIGHT
SIZE
COLOR
ORDER
CALCULATION
LANGUAGE
BIBATIVENESS
ACQUISITIVENESS
ANIMAL
SECRETIVENESS
DESTRUCTIVENESS
COMBATIVENESS
ALIMENTIVENESS
VITATIVENESS
CONTINUITY
DOMESTIC
INHABITIVENESS
FRIENDSHIP
CONJUGALITY
PARENTAL LOVE
AMATIVENESS

PHRENOLOGY.

If Self-Knowledge be, as wise men in all ages have considered it, the most important and useful of all learning, then Phrenology, which furnishes the key to this knowledge, is the most important and useful of all sciences. It enables us to measure our own capacity, to ascertain our strong and our weak points, how to cultivate the faculties which are deficient or inactive, and how to restrain or control excessive or perverted action. Knowing ourselves aright, we can set about the work of self-improvement understandingly and with the best prospects of full success.

Next to a knowledge of ourselves is that of our fellow-men, and especially of those with whom we live in close relations of love, friendship, or business, and with whom we are brought into daily and hourly contact. Much of our happiness and of our success in life depends upon the character of our intercourse with them. To make that intercourse pleasant and profitable we must understand their characters. Phrenology enables us to do this, and thus makes us masters of the situation.

Invaluable as to the Education of the Child.—The parent and the teacher will find Phrenology an invaluable guide in the training of the young. What folly can be greater than that of applying the same sort of discipline and mode of culture to all children alike; yet the teacher or the parent who knows nothing of Phrenology is almost sure to fall into this error. On the other hand, those who have taken Phrenology as a guide, adapt their teachings to the peculiar mental organization of each pupil, and in governing him are not at a loss to what faculties to appeal when he needs to be restrained or brought back from any wrong course. They do not strive to suppress any faculty, knowing that all are God-given and bestowed for a good purpose; but they aim to educate and discipline them, bringing, if possible, the lower into due subordination to the higher. No one is well fitted to become a teacher or a parent who does not understand the science of the mind and the art of character reading.

Choice of a Pursuit.—In choosing a pursuit Phrenology is of the utmost value. Some persons are fitted for one thing and some for another. A few are found who can do almost anything—are nearly as well fitted for one branch of business as another. Phrenology enables us to decide what pursuit to choose for a child. We consult his organization and find out what his natural tendencies, tastes, and capacities are, and instead of making a poor preacher, an indifferent lawyer, or a blundering doctor of a youth whom nature intended for a first-rate mechanic, engineer, or business man, we allow the boy's own natural predilections to be our guide in choosing a calling for him. Therefore take time and make yourself perfectly familiar with this very important science; it will make your life a success as well as that of your children.

The Groups and Their Functions.

1. DOMESTIC.
2. ANNUAL.
3. ASPIRING.
4. MORAL.
5. SELF-PERFECTING.
6. REFLECTIVE.
7. PERCEPTIVE.

How to Find the Organs.—The locations of the perceptive organs and most of the others lying at the base of the brain are readily determined by means of our diagram (fig. 23) and descriptions; the eyes, the eyebrows, the ears, or the occipital protuberance, as the case may be, furnishing a convenient point of departure from which each may be reached with little chance for error. The exact situations of those lying farther from these fixed points are less easily determined by the beginner.

Draw a line perpendicularly upward from the opening of the ear: you first cross Destructiveness, which lies above and partly behind the ear. When large, there will be great width of brain between the ears, and a swelling out of the organ just over the orifice of the ear; when small, the head will be narrow between the ears, with no protuberance at the point designated. Next above this, and three-quarters of an inch from the top of the ear, you come upon the fore part of Secretiveness. Extending this line upward, you pass over Sublimity and Conscientiousness, and at the top of the head strike the fore part of Firmness, which, when large, gives a fullness to the crown. Taking this as another fixed point, you can readily determine the location of the other organs on the median line, and each side of it. Between Self-Esteem and Inhabitiveness, on this central line, is Continuity, which, being generally small, is usually marked by a depression at that point, and is thus easy to find.

To find Cautiousness, another important point to fix correctly in the mind, draw a line perpendicularly upward from the back part of the ear, and just where the head begins to round off to form the top, you will come upon that organ. Forward of Cautiousness, and in a line with it, are Sublimity, Ideality, and Mirthfulness.

Between Firmness and Benevolence is Veneration, in the center of the top-head. When this middle part rounds out and rises above the parts next before and behind it, Veneration is larger than Firmness and Benevolence. Below Veneration are the two organs of Hope and Spirituality.

Above Alimentiveness, and the fore part of Destructiveness, is Acquisitiveness.

A horizontal line drawn backward from the outer angle of the eye strikes at the center of the back-head the upper part of the organ of Parental Love. An inch or a little less below this point is the occipital protuberance, which denotes by its degree of development the power of endurance, and activity of the muscular system. It is large in great walkers. On each side of this, and just below, is the organ of Amativeness, giving thickness to the neck below and between the ears.

With these points fixed in the mind, you will be enabled to find the organs; but must learn to distinguish the *form* of each and its *appearance* when developed in different proportions to the others.

We have referred to our diagrams, symbolical head, and bust, but these can only show the situation of the organs on some particular head, taken as a model, and it is impossible by means of them to convey more information than we have thus conveyed. The different appearances in all the varieties of relative size must be discovered by inspecting numbers of heads and comparing one with another.

Definition of the Organs.

1. **Amativeness.**—Love between the sexes, desire to marry. This organ is situated in the base of the back-head as shown (No. 1, fig. 23). A large cerebellum or bump is usually accompanied by a massive chin indicative of strength, vital stamina and ardor of passion.

RESTRAINT.—The excesses to which this propensity often leads are not always referable to the excessive development of the organ in the brain. The true cause is often gastric irritation and an inflamed state of the blood. A too stimulating diet; liquors, coffee, and tobacco, and the excitements of sensational life, are the principal causes of this unhealthy condition. The first step is to remove these causes. Abandon the stimulants, withdraw from social excitements and cultivate the society of people living a quieter and more sober and natural life. Bathing and exercise in the open air, with a rather spare and cooling diet, will aid in restoring the system to a healthy tone.

A. Conjugality.—Matrimony, love of one, union for life.

LOCATION.—This organ is situated in the lower part of the back-head (A, fig. 23), just above Amativeness. It does not admit of pictorial illustration, except merely to indicate its place.

CULTIVATION.—To develop this organ strive to center all hopes, interests and plans for life in the one already beloved, and not let new faces awaken new loves.

2. Parental Love.—Regard for offspring, pets, etc.

LOCATION.—The organ of Parental Love, or Philoprogenitiveness, is situated above the middle part of the cerebellum (2, fig. 23).

CULTIVATION.—To cultivate this organ one should court the society of children, play with them and enter into their sports and games, sympathize with them in their joys and griefs, being tender and indulgent toward them. Those who have no children should adopt one or more, or provide some suitable pets.

3. Friendship.—Adhesiveness, sociability, love of society.

LOCATION.—This organ is situated at the posterior edge of the parietal bone (3, fig. 23).

CULTIVATION.—Friendship may be cultivated by associating freely with those around us, going into society, keeping the heart open to all social influences.

4. Inhabitiveness.—Love of home and country.

LOCATION.—Inhabitiveness is located between Parental Love and Continuity, on the back part of the head (4, fig. 23).

CULTIVATION.—Make home attractive and cultivate a love of it by planting trees and shrubs, and by dwelling on the associations connected with it. Reading history of one's country and cherishing just pride in its greatness and glory.

5. Continuity.—One thing at a time, consecutiveness.

LOCATION.—Continuity is situated next above Inhabitiveness and below Self-Esteem (5, fig. 23).

CULTIVATION.—Have an arrangement of work or business as will compel continuous attention to one thing, or a steady adherence to one line of conduct. Let it be "one thing at a time."

E. Vitativeness.—Love and tenacity of life, dread of death.

LOCATION.—(E, fig. 23).

CULTIVATION.—The constant contemplation of the pleasures and advantages of life in the largest possible measure, or to do good by living will increase this organ.

RESTRAINT.—A morbid love of this life should be held in check by cultivating faith in God and in a better life to come.

6. Combativeness.—Resistance, defense, courage, opposition.

LOCATION.—This lies behind and above the ears (fig. 23) at 6. Its office is to give the will and ability to overcome obstacles, contend for rights. If it be necessary to fight for these objects, it gives the pluck to do it.

CULTIVATION.—To cultivate, one should rather court encounters with whatever has a tendency to call out a spirit of opposition.

RESTRAINT.—To restrain Combativeness requires the controlling power of the intellect and the moral sentiments, which should be placed as guards over it before it bursts into flame, the rising spirit of anger and contention.

7. **Destructiveness.**—Executiveness, force, energy.

Location.—Destructiveness (7, fig. 23) is situated immediately above the ear.

Restraint.—To restrain, cultivate Benevolence, a mild and forgiving spirit, avoid killing anything, and take but little animal food and no alcoholic liquors.

8. **Alimentiveness.**—Appetite, hunger, love of eating.

Location.—It is situated (fig. 23), immediately in front of the upper part of the ear.

Restraint.—To restrain this is difficult. It requires the exercise of the higher organs, whose action will hold the appetites in check. The temptations of rich, highly seasoned food should be avoided. "Eat to live, rather than live to eat."

9. **Acquisitiveness.**—Accumulation, frugality, economy.

Location.—This organ is situated on the side of the head next above Alimentiveness (9, fig. 23).

Cultivation.—Some plan must be made to compel a more prudent and saving course. Keeping a strict account of personal expenses, balancing cash accounts frequently, will remind one how the money goes and wherein much of it might be saved.

Restraint.—The only way to restrain this is by cultivating the higher faculties and sentiments; bringing their influence to bear upon them; keeping them in due subjection.

10. **Secretiveness.**—Discretion, reserve, policy, management.

Location.—The organ of this propensity is situated at the inferior edge of the parietal bone (10, fig. 23).

Cultivation.—There must be a constant effort to suppress injudicious out-gushings of feeling. Impulse must be kept in check by Cautiousness and reason.

Restraint.—A more frank, open and straightforward manner should be cultivated, and constant effort be made to give hearty expression to thought and feeling.

11. **Cautiousness.**—Prudent, provision, watchfulness.

Location.—The place of this organ is on the upper, lateral and posterior part of the head (11, fig. 23).

Cultivation.—By intellectual effort one may arouse Cautiousness and promote its development. The disastrous results of indiscretion, carelessness and recklessness should be kept before the mind, and a more prudent and watchful policy resolved upon.

Restraint.—Reason should tell us that excessive Cautiousness inclines us to magnify dangers, and to be over-anxious; we should therefore adopt a bold and decided course of action and promote a more daring spirit.

12. **Approbativeness.**—Ambition, display, love of praise.

Location.—Located on the upper and back part of the top side-head (12, fig. 23).

Cultivation.—One who is too careless of reputation and of the opinions of his fellow-men, should see the real value of public opinion and of the importance of one's character, and standing among men. The cultivation of manners and etiquette will help to develop this organ.

13. Self-Esteem.—Self-respect, independence, dignity.

Location.—This organ is at the back part of the top-head (13, fig. 23).

Cultivation.—This faculty should be corrected by bringing into view the best traits of one's character. "I am a man," or "I am a woman."

Restraint.—To restrain forwardness, pride, excessive self-confidence and an overbearing, domineering spirit, cultivate the moral sentiments and especially Veneration.

14. Firmness.—Decision, perseverance, stability, tenacity of will.

Location.—This organ is at the back part of the coronal region (14, fig. 23).

Cultivation.—One must constantly remember his weakness in this matter and strive to have a mind of his own, and to overcome difficulties instead of turning aside to avoid them.

Restraint.—To restrain Firmness, we must subject it to the influence of reason and the moral sentiments. Listen, at least, to advice, and if good try to profit by it.

15. Conscientiousness.—Integrity, love of right, justice, equity.

Location.—This organ is on the posterior and lateral parts of the coronal region (15, fig. 23).

Cultivation.—Keep a sense of right and wrong uppermost in our minds in all transactions, and to make everything subservient to justice and moral principle. Our motto should be: "Let justice be done though the heavens fall."

16. Hope.—Expectation, enterprise, anticipation.

Location.—This organ is on the side of the top-head (16, fig. 23).

Cultivation.—Lively society and companionship of those who are cheerful and buoyant. Do not be easily discouraged nor look on the dark side.

Restraint.—Cool judgment must be kept always on guard to correct the over-estimates of this sentiment. In business, persons in whom Hope is too large, should adopt and strictly adhere to the cash principle, as there is great liability to buy too much and sell without sufficient security.

17. Spirituality.—Intuition, faith, "light within," credulity.

Location.—This organ (17, fig. 23) is situated above Ideality, in the region of the top-head.

Cultivation.—Meditations on divine things, the reading of religious works and attending religious meetings will aid in its development, if right use be made of such opportunities.

RESTRAINT.—When it is necessary to check Spirituality, the restraining organs of Cautiousness, Self-Esteem and Firmness must be called to the support of reason, and the mind withdrawn from the constant contemplation of the spiritual and fixed upon the real, tangible things of this life.

18. Veneration.—Reverence for sacred things, devotion, respect.

LOCATION.—This organ is situated in the middle of the coronal region (18, fig. 23), between Benevolence and Firmness.

CULTIVATION.—Attendance on religious worship, respect to all superiors should be cultivated, and the mind led to the contemplation of the greatness and goodness of God.

19. Benevolence.—Kindness, goodness, sympathy, philanthropy.

LOCATION.—This organ is situated in the middle of the fore part of the top-head. Its location is marked with its proper number (19) in our diagram (fig. 23).

CULTIVATION.—Read and reflect upon the life of Christ, also strive to be less selfish and accustom yourself to deeds of benevolence.

20. Constructiveness.—Mechanical ingenuity, sleight of hand.

LOCATION.—This organ (20, fig. 23) is situated just forward of Acquisitiveness.

CULTIVATION.—The constant use of tools, however awkwardly at first, the study of the mechanic arts, writing, drawing, etc., will exercise this organ and promote its development.

21. Ideality.—Refinement, love of beauty, taste, purity.

LOCATION.—This organ is situated nearly along the temporal ridge of the frontal bone (21, fig. 23), between Mirthfulness and Sublimity, and directly above Constructiveness.

CULTIVATION.—To cultivate this faculty carefully avoid all vulgar habits, associates and surroundings, keep good company, be tasteful in dress, practice the best style in conversation and manners, study poetry, art and general literature, and appreciate beauty in all its forms.

B. Sublimity.—Love of grandeur.

LOCATION.—Just back of Ideality. (B, fig. 23).

CULTIVATION.—The contemplation of mountain scenery, the ocean, the cataract, the volcano, the reverberating thunder, and whatever else is grand, or sublime, will develop this faculty.

22. Imitation.—Copying, patterning, mimicry, following examples.

LOCATION.—This organ is situated on the side of the top-head, between Ideality and Benevolence.

CULTIVATION.—Writing from copy, drawing, making patterns and models, attending dramatic exhibitions, taking part in private theatricals will develop this organ.

23. Mirthfulness.—Perception of the absurd, jocoseness, wit, fun.

Location.—This organ is situated on the side of the upper part of the forehead (23, fig. 23).

Cultivation.—The company of mirthful people should be sought, laughter is promotive of health and longevity. The injunction to "laugh and grow fat!" is not without reason.

Restraint.—It is the abuse of this faculty that we should strive to avoid, by cultivating sobriety and reverence. We often give great pain by our disposition to "make fun" at the expense of others.

24. Individuality.—Observation, desire to see and examine.

Location.—This organ is situated in the center of the lower part of the forehead (24, fig. 23) immediately above the top of the nose.

Cultivation.—Study natural history—especially botany—anatomy, mineralogy and chemistry to develop this faculty. It is also exercised in the study of Phrenology and Physiognomy.

25. Form.—Recollection of shape, memory of persons and faces.

Location.—This organ is situated in the internal angle of the orbit (25, fig. 23), and if large, pushes the eyeball toward the external angle, a little outward and downward.

Cultivation.—Study sciences as Phrenology, Botany, etc. Take constant observation of everything presented to the eye.

26. Size.—Cognizance of magnitude, measuring by the eye.

Location.—This organ is at the internal extremity of the arch of the eyebrows (26, fig. 23).

Cultivation.—Make constant attempts to estimate the length, breadth and other dimensions of objects, verifying observation by measurement.

27. Weight.—Balancing, climbing, perception of the law of gravity.

Location.—This organ is located on the superciliary ridge, about one-third of its extent from the root of the nose (27, fig. 23).

Cultivation.—Skating, practicing gymnastic feats, riding on a horse, walking, climbing, sailing, etc., develop Weight.

Restraint.—If one attempts dangerous feats of climbing, walking on narrow places, etc., he should cultivate Cautiousness and hold Weight in check.

28. Color.—Perception and judgment of colors and love of them.

Location.—This organ (28, fig. 23) is the middle of the eyebrow, at the most elevated part of the ridge.

Cultivation.—Observing and classifying or arranging colors, painting, cultivating flowers, etc., will develop this organ.

29. Order.—Perception and love of method, system.

Location.—This organ is situated over the outer corner of the eye (29, fig. 23), between Color and Calculation.

Cultivation.—Any business that requires system and orderly arrangement, studies involving contemplation and a regular arrangement of objects, will develop Order.

30. Calculation.—Cognizance of numbers, mental arithmetic.

Location.—This organ is situated at the outer angle of the eye (30, fig. 23).

Cultivation.—The study of arithmetic and algebra, and the practice of calculation in its various forms and especially mental computations, exercise and develop this faculty.

31. Locality.—Recollection of places and scenery.

Location.—This organ is situated in the forehead over the inner corner of the eyebrows (31, fig. 23).

Cultivation.—Traveling, the study of geography, memory of places, roads, landmarks, etc., will develop this organ.

Restraint.—A too strong disposition to rove, or a restless desire for a continual change of place, must be met by a determination to settle down and establish a permanent home.

32. Eventuality.—Memory of facts and circumstances.

Location.—This organ is situated in the center of the forehead (32, fig. 23).

Cultivation.—Reading history, mythology, the newspapers of the day, etc., charging the memory with the events related; writing down or relating the incidents of every-day life and telling stories, will promote development.

33. Time.—Cognizance of duration and succession of time, punctuality.

Location.—This organ is situated just above the middle of the eyebrow (33, fig. 23).

Cultivation.—Regular habits in time, as in rising, retiring, taking meals, etc., the practice of music, dancing and rhythmic gymnastic exercises promote this organ.

34. Tune.—Sense of harmony and melody, love of music.

Location.—This organ is situated on the side of the forehead just above the outer corner of the eyebrow (34, fig. 23).

Cultivation.—Practice of vocal and instrumental music, attending concerts, to appreciate music will increase the organ of Tune.

35. Language.—Expression of ideas, memory of words.

Location.—This organ is situated on the back part of the orbitary plates, the bones which form the roof of the eyes and support the anterior lobes of the brain (35, fig. 23).

Cultivation.—The constant practice of talking and writing, study of languages and committing to memory will promote this faculty.

Restraint.—Where Language is very large and active, it sometimes leads to verbosity, in which case there must be effort to check it and a constant watchfulness over one's self in speaking.

36. Causality.—Applying causes to effect, originality.

Location.—Situated in the upper part of the forehead (36, fig. 23), on each side of Comparison which occupies the center. The two together, when both are large, give great fullness to that portion of the forehead.

Cultivation.—Study philosophy in all its branches; plan; contrive ways and means; study the laws of nature; trace out the connection between observed phenomena and their causes.

37. Comparison.—Inductive reasoning, analysis, illustration.

Location.—This organ is situated in the upper part of the forehead on the middle line between the two sides, and generally just below the roots of the hair, the bottom being about the center of the forehead (37, fig. 23).

Cultivation.—Studying logic, mental philosophy (phrenologically) botany, etc., or the constant exercise of one's analytical powers in any branch of study or business.

C. Human Nature.—Perception of character and motives.

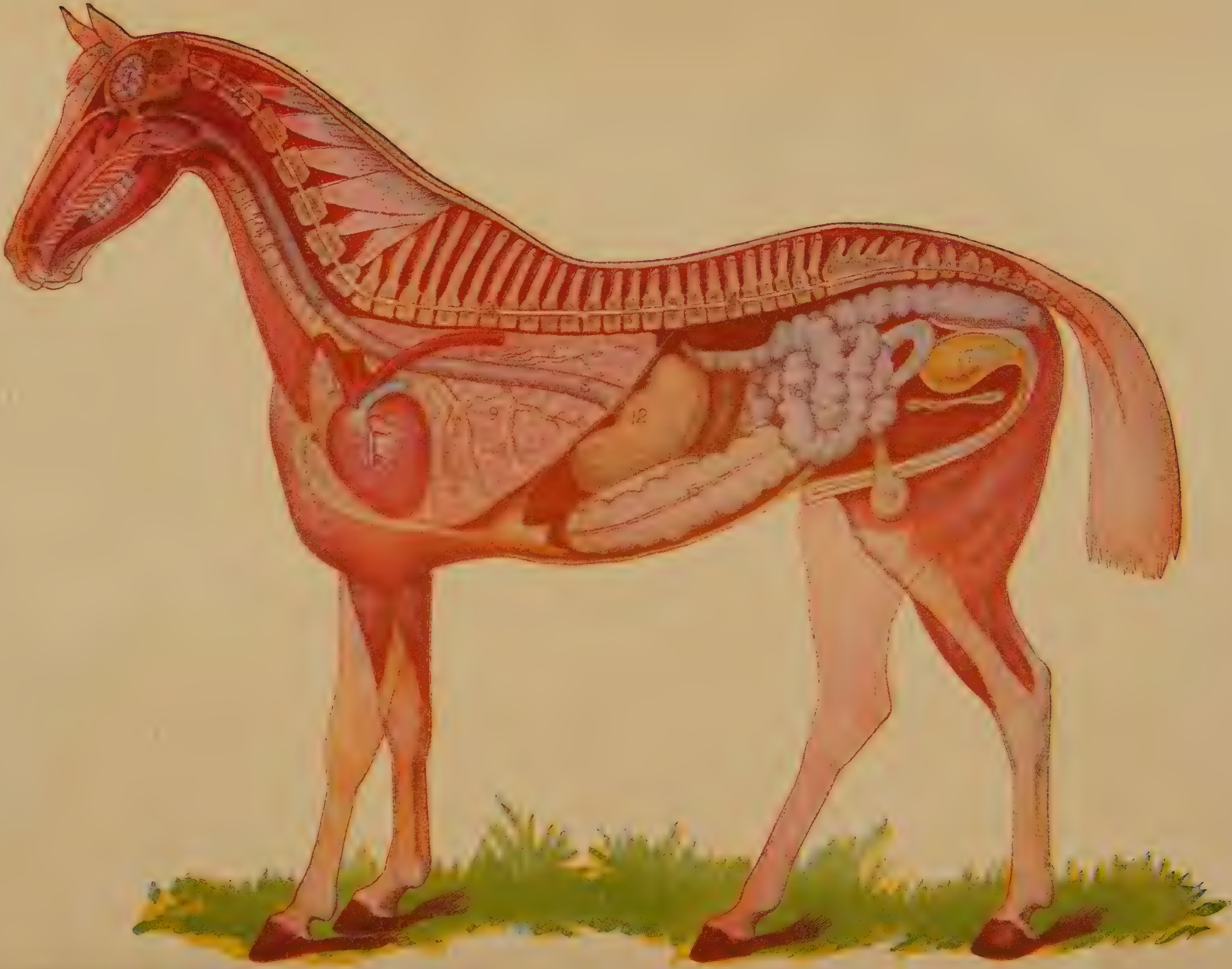
Location.—This organ is situated on the median line of the forehead, between Comparison and Benevolence (C, fig. 23).

Cultivation.—Make human nature a study, using Phrenology and Physiognomy as guides in its prosecution. Observe every one you meet, and note the expression and action, and try to read them as an open book.

D. Agreeableness.—Pleasantness, suavity, persuasiveness.

Location.—This is situated on the upper edge of the forehead (D, fig. 23), over the inner angle of the eye about two inches above the eyebrow.

Cultivation.—Study and practice the art of politeness with Benevolence and Conscientiousness, to make ourselves, so far as possible, agreeable to those around us, we shall come to feel agreeable, and develop the organ of that feeling.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VETERINARY.

A FULL DESCRIPTION IN PLAIN LANGUAGE OF THE

Anatomy, also the Diseases,

OF THE

HORSE,

CATTLE,

SHEEP,

AND **DOG**

GIVING ALL THE SYMPTOMS OF THEIR DIFFERENT DISEASES, AND IMPARTING THE KNOWLEDGE OF DISTINGUISHING ONE DISEASE FROM ANOTHER, TOGETHER WITH INVALUABLE PRESCRIPTIONS AND THE LATEST DISCOVERIES IN VETERINARY MEDICINE

For their Prevention and Cure

BY

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EXPLANATION OF (colored) ILLUSTRATION OF HORSE

1. Brain.
2. Small brain.
3. Nostrils.
4. Spinal column and ribs.
5. Jaw.
6. Tongue.
7. Trachea or windpipe.
8. Gullet running to stomach between the lungs.
9. Lungs showing bronchial tubes.
10. Heart. Is directly under the sixth rib, but in the drawing it is moved forward, to show bronchial tubes in lungs.
11. Liver.
12. Stomach.
13. Spleen.
14. Left kidney.
15. Large intestine.
16. Small intestine.
17. Bladder.
18. Rectum.
19. Scrotum.

VETERINARY MEDICINE.

While it cannot be said to be absolutely true that a full knowledge of the histories and biographies of the institutions and men who have preceded us can be taken as an infallible guide in our actions, it is certainly true that the indications furnished by such studies are exceedingly apt to give us the surest general guides that we can have. That experience is the best teacher is proverbial, but it is also equally true that it is the most costly of teachers; therefore a good knowledge of the recorded experiences of others may be of considerable economic value to us.

There is evidence that the Egyptians practised veterinary medicine and surgery in very remote times; but it is from the Greeks that we first obtain any definite information in regard either to veterinary or human medicine, in antiquity. The writings of Hippocrates, about four hundred years before the beginning of the Christian era, afford excellent evidence of the study of medicine both among animals and man.

From this onward, for hundreds of years, the practise of veterinary and human medicine proceeded hand in hand, descending through a line of men whose names are even now familiar, all of whom industriously studied diseased animals and men and wrote, to great length, the results of their work. Therefore it is seen that veterinary medicine of antiquity was really a system of medicine applied to both men and animals, oftentimes by the same individual.

It was then, as it is to-day, true, that during all of the long period, the followers of medicine at different times became divided into various sects, cults, or schools; each of which was able to defend the new positions taken by them with more or less plausible statements, the relation of which would be entirely outside of the present purposes.

From the third century onward, veterinary medicine began to have a literature and regular practitioners of its own, especially in the service of the Roman army; and it was not until during the fifth century that the first indications appear of the introduction of the absurd and irrational practises which were, for so long a time, causes of discredit to the veterinary art.

In excuse for this, however, it may be said, that this time was that of the beginning of the so-called Dark Ages, or period of intellectual darkness, in Europe, during which medicine and much other scientific knowledge was maintained, until nearly at the end of the fifteenth century, by no more than a thin connecting line, kept for the most part by the monks, who certainly, while not adding anything to the ancient knowledge, allowed it to become thoroughly mixed with magic, demonology, and superstition. Therefore it is that toward the end of the fifteenth century Anglo-Saxon animal medicine, from which that of the present day in America has almost entirely descended, was made up of a mixture of magic, superstition, and the remnants of the ancient science.

Because, apparently, at about this time the King of England and others of wealth in that country began to desire better horses than were then available to them at home, and to have these animals better cared for, a farrier of repute was imported from Italy to give instruction to this end. This is interesting as giving the time of the beginning of the application of the term Farrier to those who had theretofore been "horse doctors"; just as since then the term Veterinary Surgeon has supplanted that of Farrier, and within a few years the term Doctor of Animal Medicine has begun to be used instead of "Veterinary Surgeon." It may be that we are slowly working back to the condition of the beginning; and that the terms Science of Medicine and Medical Doctor will come into common use and be understood to mean what it did in the beginning; that the graduate of a medical school is capable of practising his art and science upon either the animal or man, as he may elect; much as now the physician divides practise among men into several various specialties.

Further facts concerning the more modern progress of medicine and the different schools of practise can be advantageously read by those interested in the subject, in the earlier part of this volume, under the title of "Progress of Medicine and the Different Schools."

Definitions.

While no attempt will be made here to treat this subject exhaustively, it is still felt that, for those who really care to make themselves fairly well able to distinguish one disease from another, at times, some idea should be had of what is meant by the terms and what their presence generally indicates.

A *Symptom* is a sign of disease, obvious to all who see the animal; the symptoms of some disorders are much more noticeable than those of others. All symptoms, in animal practise, are objective, that is, they must be found as a result of a person's observation of the ailing animal; he cannot describe his own feelings or state just where the pain is located. A good or bad observation of these, results in a good or bad *Diagnosis*, that is to say, a valuable or a valueless opinion as to what the matter is; and this is by far the hardest and most important part of the whole matter, for it is a comparative easy process, the name of the disorder having once been ascertained without doubt, to find out how the case should be treated, what medicines or care are likely to give the best results. To help this there are a certain set of what, in all animals, may be called *general symptoms*, a full understanding of which will very much simplify the whole matter and generally point to the part of the body, at any rate, in which the disorder exists. These general symptoms will be found by:

First. A close observation of the expression of the face and the position in which the animal places his body when he is allowed to do what he wishes.

Second. The condition and color of the membranes lining the nostrils and the eyelids.

Third. The pulse.

Fourth. The movements made in breathing.

Fifth. The condition of the surface of the body and the extremities, *i.e.*, feet, legs, and tips of the ears; and

Sixth. The internal temperature of the body.

Expression. — The face may show anxiety, alarm, or be "pinched." This indicates some disorder accompanied by pain, the present importance of which is shown by the expression; as anxiety; a newly realized pain of slight degree; alarm; an increased and considerable pain; while the pinched expression indicates either very severe or long continued suffering.

Appearance of Membranes. — This, in health, is a palish red and should be examined, so that its healthy color may be easily recognized. *Increased redness* is a sign of over-excitement of the blood circulation and, unless it be due to recent exercise, which is a natural cause, indicates fright, great excitement, anger, overwork of the heart, or general fever. Small, deep red scattered dots, or even rather larger patches of red, indicate the presence of something that has changed the quality of the blood; some disorder of the blood. These diseases generally arise from unhealthy surroundings, poor quality of food, or a contagion.

Yellowness indicates a disorder of the liver either functional or organic, in which some of the bile is not fully excreted from the blood. Organic disease, *i.e.*, disease of the liver itself, is comparatively very rare; the symptom generally means some disordered condition of the digestion, and is helped by a good physic, epsom salts in preference.

A Livid or Bluish Color. — A condition of the blood in which there is an insufficient amount of oxygen; it may arise from any cause which prevents the free access of air into the lungs; as bronchitis, pneumonia, various troubles in the throat or nostrils, too much pressure on the windpipe as from a high breastplate, a small collar, a tight cribbing strap; certain cases of heaves, especially in an animal that has eaten a large amount of hay or grass. The slaty color is often seen in the nostrils of old horses, where its existence may be simply due to old age and a consequent poor circulation of the blood.

Pallidity, Bloodlessness, Anæmia, and General Debility. — If it happens suddenly, it is due to a large loss of blood; as from an internal or external hemorrhage; in which case the extremities will be cold, the pulse fast, and the animal may yawn more or less.

The condition of the tongue and mouth is occasionally of considerable importance in helping to point out the seat of trouble. Over-redness of it indicates an irritable and congested condition of the digestive organs. Around the free borders of the tongue and upon its surfaces, more particularly the under one, large, irregularly shaped but very shallow patches are occasionaly met with, which are due to some form of indigestion in the stomach probably. In some other forms of dyspepsia there will be seen a slightly foul or soapy condition of the membranes in the mouth, although the foul condition of the mouth and tongue so commonly seen in human medical practise is not by any means so common in animals; its nearer approach being in the dog.

Dryness of the Mouth is often indicative of inflammatory diseases, more particularly those affecting those of the digestive organs.

An Over-moist Condition of the mouth arises from an over-secretion by the salivary glands, and may be due to catarrhal disease, inflammation of the membrane at the extreme end of the cavity of the mouth (pharyngitis), paralysis of the muscles of swallowing (not particulary uncommon in the horse), the presence of sharp teeth (in horses), or some foreign body which may have become lodged between the teeth, in the cheek, under the tongue, or some other part of the cavity, as a thorn from the hay, a sliver of wood, piece of bone (in dogs), etc.; nausea, choking, certain weeds in the hay or pasture, and other conditions which may or may not be easily discoverable. In these latter conditions in horses or cattle the over-secretion can be controlled by the proper administration of belladonna.

Sudden pallor of the mouth and tongue, with coldness of the body surface and extremities denotes approaching death from hemorrhage. A soft, flabby tongue with perhaps a little swelling of it, leaving impressions of the teeth upon its sides, indicates a chronic indigestion, and will be best treated with a dose of physic, to be followed by a course of good tonic medicine.

The Pulse.

The pulse is more conveniently examined in the larger animals at the artery (the sub-maxillary) which passes under the under jaw bone, in a slight groove which lies a little forward of the turn which the under jawbone makes to go upward toward the joint lying a little below the base of the ear. To find it easily, the finger had best be moved backward and forward under the part described until the little groove mentioned is found, and the artery, feeling like a soft cord, is felt. Then, with light pressure, the finger is to be held still upon the part until the beat of the pulse is felt, when its character and the number of beats per minute can be ascertained. It may also be felt at the temporal artery or, in fact, at any place where an artery comes near enough to the surface and has a bone underneath it which is sufficiently near to the surface to permit of light pressure of the artery against it by the finger. It is better, however, to always use the same artery for the examination, when possible, because this gives a better opportunity for the comparison of the pulse of one animal with that of another; and the touch of the examiner thus becomes better educated. The throbbings of the pulse, felt by the finger, are chiefly due to the fact that the artery expands during the contractions of the heart which pumps the blood, and that it returns to its previous condition while the heart is again filling with blood, coming to it from the veins, in preparation for its next stroke.

The Pulse of the Horse is about forty per minute, but this varies somewhat under conditions of size, age, and breed. The larger or older the animal is the less frequent the normal pulse, while in high-bred horses, as the trotters and thoroughbreds, it beats more frequently, all things considered. So that, under varying circumstances, it is not at all inconsistent with health to find a variation of ten beats per minute; thus in one animal it may be thirty-five, while in another forty-five, and still both be right for the given animal.

The Pulse of the Cow beats from fifty to fifty-five times in the minute, but the declarations of the pulse in these animals in this respect are not greatly to be depended upon, for, while the animal may be in perfect health the pulse may reach seventy or eighty beats. The act of chewing the cud, the various stages of pregnancy, the activity of the milk glands, whether she be eating considerable grain, or none at all, at the particular time, as well as fatness or leanness of the animal, will tend to cause variations which, even so, may be normal for the given animal at the time.

The Pulse of the Sheep is from seventy to eighty beats per minute and subject to the same variation as that of the cow, but in a much less degree, as will be easily appreciated, without further description.

The Pulse of the Dog ranges from eighty to one hundred, depending upon his age, size and breed, as already described.

In health, and when the animal has been at rest for some time in a medium temperature, there is nearly a uniform relation between the frequency of the pulse and of the breathing movements, the proportion being about one respiration to three or four pulsations.

There are four variations in the character of the pulse which should be noticed here:

First. As regards the number of beats within a given time: *frequent* or *infrequent.*

Second. As regards the relative time which seems to be occupied by each *beat* and the interval between them: *quick* or *slow.*

Third. As regards the apparent dilatation of the artery: *large* or *small.*

Fourth. As regards the compressibility of the artery by the finger: *hard* or *soft.*

Symptoms Afforded by the Variation in the Pulse Beats.

The Frequent Pulse.—Any increase in the number of beats beyond the normal, for the given animal, indicates some degree of excitement of the heart, which may be due to simple exercise, in which case it is normal and amounts to nothing as a symptom of disease. Otherwise it indicates a fevered condition; a long continued pulse of this kind shows a serious illness, in which instances the increasing gravity of the case will be indicated not only by the increase in frequency, but, as the weakness of the animal increases, the pulse will become smaller in volume, thus showing that the heart participates in the general weakness, which, in its turn, is due to the cause which has given rise to the fevered condition.

Excessive evacuations of blood, urine, or from the bowels, will cause a greater frequency of the pulse, which generally bears a direct relation to the danger of the situation.

The Quick Pulse indicates nervous irritability or debility, and, if continued, little strength. When a quick beat followed by an abrupt cessation, with a comparatively long interval, is present, it indicates extreme nervous irritability or, rarely, an organic disease of the heart.

The Slow or Long Pulse indicates a plethoric condition of the body; a *functional* disturbance of the heart due to certain stomach troubles, in which cases the pulse beat is often lost, at varying intervals (irregular intermittence). When accompanied by infrequency, some disorder of the brain, as compression of that organ, from some cause or other, and occasionally to organic heart disease. These conditions are not commonly alarming and may generally be relieved by a good dose of cathartic medicine. If organic heart disease be the cause, the plethoric condition of body is not usually present, in addition to which the beats of the heart will commonly be found to be in excess of those of the pulse.

A Large Pulse indicates a prolonged and forcible contraction of the heart from some cause, to be ascertained by further examination. It may be associated with either strength or feebleness of the pulsations. In a large, strong pulse the artery is not easily compressible under the finger; it indicates the first stages of some painful disorder, as founder in the feet of horses. In a large, feeble pulse there is a weak impulse, and although the full size of the artery is easily felt, its walls are quite compressible under the finger; it indicates either general debility, as in anæmic or bloodless conditions of the body or debility of the heart.

The Small Pulse is recognized when the artery seems full, although the impulse is felt to be like a very small cord or wire running through it. This condition may result from some internal congestion, as of the lungs, from feeble contractions of the heart, or from great hardness of the arterial coats, as in lockjaw or strychnine poisoning.

A Hard Pulse is that property by which the artery resists compression and results from a contraction of the *muscular* coats of the arterial walls. Hardness of the pulse is often associated with smallness; it is then termed corded, wiry, or thready; this condition is often met with in the earlier stages of inflammatory diseases, particularly during the occurrence of a fever chill; in all dangerous inflammations of *serous* membranes, as that of the membrane lining of the heart (endocarditis), or the abdominal cavity (peritonitis), or covering the uterus (metro-peritonitis).

It may be shown in cases of hypertrophy of the left side of the heart and so be present independently of any inflammatory disorder.

A Soft Pulse, readily recognized by the feebleness of the impulse and compressibility of the arterial wall, is generally accompanied by smallness, and indicates oncoming death as a result of some progressive exhaustive disorder; the heart's impulse is slight, the tensity of the artery is diminished, and the volume of the blood is small.

In order to have a strong, good pulse, there must be vigor of the heart; steady resistance to pressure on the part of the arterial walls, and enough good blood in the body. There may be a sharp, forcible beat, but if this is not sustained by a certain amount of subsequent pressure, it indicates irritation rather than energy. A contracted pulse, however sharp the impulse, cannot be called a strong one. A strong pulse is considered a sign of an active, vigorous state of the system.

The pulse of a dying animal is nearly always small, very rapid and thready; without force or fulness. It may become imperceptible before death; a small pulse of over one hundred and twenty to the minute is difficult to count with precision.

Pulsation of the Veins is often seen in the jugulars of cattle, especially during rumination and is quite compatible with health. If the neck of a horse having a lean neck is extended, by lifting his head up from the chin considerably, there may be an appearance of a jugular pulse; this, however, arises from a beating of the artery (carotid), lying immediately underneath the vein, made visible by the parts being tensed and pressed together. Otherwise pulsation of the jugular veins is ordinarily explained by an insufficient closing of some of the valves of the heart (tricuspid); thus allowing a certain amount of the blood, coming to the heart, to be sent back into the veins. This is an organic disease of the heart and, practically, incurable.

Symptoms Afforded by Variations of the Respiratory Function.

Breathing may be quickened, difficult or laborious, slow, thoracic, or abdominal; and be attended by such signs as sneezing, coughing, sighing, or yawning. The breath may be hot, as in some internal inflammations; or cold, as in cases of great prostration; bad smelling, as in abcess or gangrene of the lung, occasionally during convalescence from bronchitis; from catarrh; from certain diseased bones of the head; from bad teeth; or from certain disordered conditions of the stomach, throat, tongue, gums, or cheeks.

Quickened Breathing indicates recent exercise or excitement; fevers, pain, or anything which accelerates the circulation of the blood; or prevents the free access of air into the lungs.

Difficult Breathing (dyspnœa), may depend upon pain, as in pleurisy, disease of the muscles between the ribs; wounds or injury to the chest, external as well as internal.

Anything which diminishes the free use of the nostrils, larynx, or windpipe may make the breathing exceedingly difficult and be accompanied by such sounds as those designated by the terms blowing, roaring, or whistling. In heaves in horses the breathing is often made distressing and noisy by exercise. All diseases of the lungs by which any considerable portion of these organs are made impervious to air, or through which a dropsy into the cavity of the chest (hydrothorax) takes place, give rise to this symptom.

Difficult breathing is not always to be regarded as indicating disease of the respiratory organs *only*, for in many acute diseases, entirely unassociated with those organs, the breathing not only becomes quickened, but labored and difficult to an extreme degree. It should always, however, be regarded as a symptom of importance, not only as pointing clearly to certain diseases, but as indicating grave alterations in the condition of the blood, or in the functions of the nervous system. Diseases may be seriously aggravated, and a tendency to a fatal termination given them by difficult breathing, owing to the decreased oxygenation of the blood.

Snoring or Stertorous breathing arises from a relaxed condition of tissues at the posterior part of the mouth, and, when associated with disease, is a symptom of some gravity, showing the presence of a disorder because of which the brain is not performing its proper function; not necessarily disease of the brain. So long as the respiratory movements remain fairly strong and frequent it does not indicate *immediate* danger, but when the movements are slow, that of inspiration delayed, the general sensitiveness will be diminished even to complete insensibility (coma), and death will be near.

Slow Breathing, if marked, indicates some disordered condition of the brain.

Thoracic Breathing denotes that the muscles of the abdomen (belly) are prevented from participating, to their usual and natural extent, in the performance of the respiratory movements. The condition indicates some trouble within the abdominal cavity, or painful injury to its walls. Its presence suggests dropsy into the cavity, which may mean organic disease of the liver or kidneys, or other less frequent but important organic disorders; anæmia, acute inflammation of the lining membrane (peritonitis), wind colic, large abdominal tumors, or pain from injuries or wounds of the abdominal walls, as from a hard blow given with a club, or laceration of the skin or parts immediately beneath, as from a barbed wire or other cutting or tearing instrument.

Abdominal Breathing is present when the movements are performed, as fully as possible, by the muscles of the belly, the ribs being held as still as they can be. Its presence indicates some painful disorder or an obstruction within the chest, as pleurisy, or dropsy; or painful condition of the walls, as from injuries to them, or inflammation of the muscles between the ribs.

Irregular Breathing indicates a condition in which the usual harmony between the inspiratory and expiratory movements ceases to exist. It is seen in heaves in horses, certain cases of chronic bronchitis, asthma, and, less frequently, other disorders.

Cough. — Of this several varieties and sub-varieties are described. Of these there are two greater divisions: the moist and the dry.

The Moist Cough, sufficiently described by its name, is present in the *later* stages of catarrhal fever and bronchitis, as well as in any cases wherein the natural fluid secretion of any part of the air passages is increased.

The Dry Cough is generally present in the *early* stages of catarrh, bronchitis, or pleurisy, as well as irritation arising from any marked disturbances of the membrane lining the air passages; in dentition, when there is a loud, dry cough, frequently repeated, at intervals (spasmodic).

Cough does not always indicate diseases of the air passages, for it is often present in certain forms of indigestion, or in animals, dogs and horses principally, that have worms, as well as from choke and less common causes. These are all called sympathetic coughs.

External Temperature.

The symptoms afforded by the apparent variations in temperature of the external surface of the body are few, but are generally noted as being very good aids in helping to locate the disorder. Cold or cool extremities indicate an improper and too small blood supply at the part; and, when occurring persistently, it becomes a symptom of some importance, as indicating a tendency toward internal congestions or weakness of the action of the heart.

Sweating, aside from that which properly comes from exercise, or too much clothing, indicates pain, and, if in patches, pain or impaired nervous function of the part.

Internal Temperature.

Clinical thermometry, as it is called, is the means by which the internal temperature of the body of any animal may be easily measured; and a knowledge of how to understand the indications thus furnished are extremely valuable in many instances, as they often give the earliest notice obtainable of certain oncoming disorders, as well as being an early indicator of progress, for good or bad, in a patient under continued treatment.

Two facts justify its application to practise: the invariability of the temperature in a healthy animal, and its variations from this in those who are the victims of a wide class of disorders.

A normal temperature does not necessarily indicate health, but all those animals in which the temperature either exceeds or falls short of the normal range, for any length of time together, are not healthy. The ranges of temperature in disease which may occur in the horse, and still be followed by recovery, is from ninety-five to one hundred and eight; in cattle, from ninety-five to one hundred and ten; and in dogs, ninety-eight to one hundred and five.

Unappreciable influences which do not at all disturb the temperature of a healthy animal, quite frequently derange that of the sick one before they affect the sickness in any other observable degree, until some time afterward. Thus we are furnished with a notice of coming trouble and can take early measures to prevent bad results.

In this same direction the discovery of a constant abnormal temperature, in an animal which in all other ways is apparently healthy, is an early means of discovering or confirming the suspected existence of latent disease. This is valuable, for instance, in a stable of horses, among which a case of glanders has been found, the use of the thermometer for a few days, subsequent to the discovery, among the remaining horses, although they appear to be in perfect health, will give early opportunity for removing any others that may have been attacked by the contagion, and so help materially in limiting the spread in that stable.

A normal temperature during sickness is only a relative sign, which will exclude certain classes of disease; its value being in this only. Certain abnormal temperatures are generally associated with a certain type of disease. A rapid increase of the heat of the body, and decrease of the appreciable surface heat is associated with chills and generally is a sign of an oncoming, strong attack of fever. A protracted temperature of one hundred and two or more is usually accompanied with dulness, thirst, frequency of the pulse, and increasing thinness of the body.

Any considerable diminution of warmth in the extremities, as the legs and ears, with a high temperature, or with one below the normal, is expressed by a small pulse, sunken eyes, and, if it be maintained, collapse and death. An elevated temperature, *whatever its cause*, has by itself an influence on the functions of the general system. When it is only slightly raised, its action may not be appreciated; but when it is, and remains, considerably raised, the most evident effect will be a loss of flesh; the pulse and respirations will be faster and the brain may exhibit functional disturbances; the secretion of urea increases, making the urine heavy and of a dark color; and there is a tendency to local congestion and fatty degeneration of various organs; and, as already intimated, we know that the continuance of life is impossible with certain continued elevations of temperature.

A clinical thermometer is obtainable, at a small cost, from most any druggist, who will also gladly explain the proper method of using it. All internal temperatures, in animals, are taken by inserting the wet or well soaped thermometer into the rectum, for about two thirds of its length, and letting it remain there for three minutes. An instrument of four inches, or even a little less, is as good for use among animals as one that is larger. Care must be taken to see that the mercury column is properly shaken down just before it is to be used.

General Diseases Common to all Animals.

Morbid State of the Blood. — A nutritive fluid circulates through the tissues of all organized life. This liquid, which is essential to life, is known as the sap in plants, and the *blood* in animals. The sap is probably simply nutritive; the liquid flesh, as the blood has been called, is a nutrient and something more, for it is also the means by which some of the used-up materials are removed from the system, as it flows through the liver, kidneys, lungs, etc. The characteristics of the living animal organism are ceaseless change and ceaseless waste. Directly it begins to live it begins to die. In the blood, as in the different tissues, the process of decay and regeneration, of destruction and reconstruction, only terminate with the extinction of vitality. During action the tissues waste; during repose they are nourished and the waste repaired. Hence an animal must have pure air, good sound food in proper quantity, pure soft water, and a proper amount of exercise, rest, and sleep, in order that he may have a due supply of good nutrient blood, to be distributed to the various tissues for their healthy, proper nourishment. "The blood is the life"; good blood is healthy life.

In early life the amount of this nutrition absorbed by the various tissues of the body is greater than the expenditure of used-up tissues; hence there is a gradual, healthy increase in weight. But in old age this operation is reversed, until the means of repair are at length exhausted; used-up material is thrown off, new healthy material does not take its place, and the animal dies of old age.

Something of the same thing happens in disease, the early operation of which is to upset the normal equilibrium between supply and waste; the tissues of the body continue to waste, in an excess, which is not removed; useless or poisonous agents then become generated within the body, from this retention, and sickness of more or less moment results.

Life is only to be maintained by the circulation of pure arterial blood; and whether no blood circulates through the arteries or only that which has become impure and contaminated from various causes, the result will sooner or later be the same; the death of the animal.

When no blood circulates the death takes place from fainting (syncope); and this is of two kinds. First, *anœmia,* when there is a want of the due supply of blood to the heart, as is witnessed in fatal hemorrhages. Second, by *asthenia,* when there is a failure in the contractile power of the heart, seen to occur from the action of certain poisons, intense terror, from overdoses of electricity, concussion of the brain, as well as certain forms of apoplexy. Death may also take place from a mixture of these two causes, as may be particularly noticed in fatal cases of starvation and lingering disorders.

Death may also take place from the circulation of venous blood through the arteries, and this may result in two ways: suffocation (apnœa) when the access of air to the lungs is prevented, as in drowning, strangulation, choking, immobility of the respiratory muscles from a bad case of wind colic, pneumonia, when a large portion of the lung tissue has become solidified, dropsies into the cavity of the chest, etc.; and *coma,* in which, although the air passages are free, the muscular movements required for respiration cease, owing to insensibility produced by some trouble with the brain, as milk fever in cows; cerebro-spinal meningitis in horses and dogs; some forms of distemper in dogs; as well as in some other disorders not so frequently met with.

Thus in death by apnœa there is, successively, impeded respiration, the circulation of non-oxygenated blood, and insensibility; while in coma, the order of the phenomena is reversed; there is first insensibility, followed by a cessation of the muscular movements of the chest walls; and the consequent circulation of blood which has not been made "arterial," *i.e.,* oxygenated.

The blood may be described as being an albuminous fluid, charged with various salts holding the elements of fibrin in solution, and containing both red and white globules (corpuscles). Its specific gravity is high; the extremes, compatible with health, will vary from 1050 to 1059, as measured with distilled water at 1000. The gravity is diminished by bleeding, anæmia, or albuminuria; while it is increased by conditions inducing excessive watery discharges either from the bowels or kidneys. It is most probable that the average relative weight of the blood to that of the body is about as one to fourteen, the maximum being found as the digestion of a hearty meal is drawing to a close. The blood-vessels of an healthy adult horse, of one thousand pounds weight, probably contain about seventy-two pounds of blood.

The blood receives matter from three sources: the atmospheric air through the lungs; the digestion which takes place in the alimentary canal; and the secondary digestion, as that process has been called, by which the waste tissues of the body are absorbed, to be discharged from the economy.

In return it furnishes material for building up the tissues, for forming the secretions, while it also warms every part of the body. Hence whatever interferes with the process of digestion, or respiration, with the excretory organs, as the bowels, liver, kidneys, and skin, as well as the healthy condition of the nervous system, will affect the composition of the blood and so induce a disorder of more or less gravity.

Plethora-Congestion.—Is fulness of blood. When the blood merely exists in too great a quantity in one or more of the organs or tissues, there is said to be a partial plethora or congestion of the organ or tissue affected, in which case there is no increase in the total amount of blood or any of its constituents in the body.

If an organ or a part of any living body becomes irritated from any cause, as from proper exercise, there is an increased flow of blood to that part. If the irritation is carried beyond that which is natural and proper to the part, as from "catching cold" in the lungs, or from a strain of a tendon, the blood-vessels then become unable to pass the blood through them properly; as a result, swelling takes place, that is, there is an active congestion of the *part*. This condition, after a time, either decreases little by little (resolution), ends in slight hemorrhage into the immediate tissues from rupture of the overloaded vessels, or passes on to inflammation.

Again, the circulation of the blood through a part may be sluggish owing to a want of tone in the walls of the veins; this gives rise to what is called a passive congestion there. When the return of blood through a vein, on its way to the heart, is impeded by any pressure upon the vessel from without, it is described as a mechanical congestion. Such a condition may be brought about by a badly fitting collar on a draft horse, or by tying a string around a part of the leg or tail, as is not infrequently done by a mischief-maker.

The condition so commonly found in horses, which seem otherwise to be in good health, wherein the legs swell or a swelling appears along the under part of the belly or around the sheath, generally so easily removed by exercise, is a passive congestion due to want of tone of the veins of the part.

General Plethora—Horses, Cattle, and Sheep.

This is a condition of over fulness of blood of the whole body and generally appears among young, fast thriving animals; more particularly horses, cattle, and sheep.

Causes. — Excess of some highly nutritious food; a need of more exercise; or a mixture of both. To illustrate from my case book: Two brown geldings, one six and the other five years old, had been allowed to stand, without work, for the greater part of the winter in the same stable, with and upon the same food, hay and oats, as had been given to the other horses which were in full work. When they were first put to work in the spring they had sweat profusely after very little exertion, the respirations were greatly accelerated, and there was a small dripping hemorrhage of dark colored blood from the nostrils. One of them had been markedly dizzy. When seen they were very fat; the membranes much deepened in color; pulse fuller and harder than natural; the surface of the body felt warmer than usual, and the blood-vessels of the surfaces of the shoulders and limbs stood out like cords.

A large flock of *sheep* which were kept by a golf club, for the purpose of keeping the grass close, in the summer, were put into some sheds through the winter and fed upon hay and a large ration of grain, without roots. Early in the spring they became dull, without appetite, and evidently dizzy; several of them died before medical attendance was requested; none after it had been instituted.

Symptoms. — The veins are distended, as shown on various parts of the bodies in short-haired animals; there is great redness of the membranes of the eyelids and nose, the congestion of the eyelids is sometimes so great as to give them quite a swollen appearance. The pulse is large and somewhat hard and resistant to the touch; the animal is indolent and occasionally dizziness is evidenced by his pressing his head (boring) against the side of a building or some other firm object. The respiration slow. If unrelieved, death follows, beginning with *coma*. It is not necessary that the subject of this disorder be fat; a too sudden increase in the richness of the food may produce the disorder before the thin animal begins to lay on much flesh.

Treatment will consist in making proper changes in the food, restricting its quantity or lessening its high quality; seeing that sufficient exercise is allowed or given; and the administration of a good dose of cathartic medicine, which had better be of epsom salts. Bleeding is contra-indicated. The cathartic dose for the various animals may be made as, for a horse of eleven to twelve hundred weight:

R.	Epsom Salts	1¼ to 1½ lbs.
	Powdered Ginger-root	½ ounce
	Molasses	¼ pint
	Lukewarm water	1 quart

Mix. When the salts are thoroughly melted turn down from a bottle, in the usual way. Give all at a dose.

The same dose may be given to cattle, except that the salts may be from one pound for a small cow to two pounds for a larger bullock.

In sheep: Salts 4 oz. to 6 oz., ginger 1 dram, molasses 1 teaspoonful, and water ½ pint.

Anæmia — Horses, Cattle, Sheep, and Dogs.

Causes. — This is a conditon of deficiency or poverty of the blood arising generally in animals that have been deprived of some one or more of the conditions which have already been described as being necessary to the formation of healthy blood. It is also met with in instances wherein the digestive functions have been imperfectly performed; where small hemorrhages repeatedly take place, as well as in the course of many debilitating, or organic diseases.

Symptoms. —The chief of these consist in a great pallor of the membranes. The membrane of the eyelids is pale, clear, and waxy looking, the mouth is cool, and the tongue has an unnatural softness. The pulse is frequent, small, quick, and possibly irregular. Any sudden excitement is not unlikely to produce some degree of palpitation of the heart, which, however, is not material in itself as it is generally no more than functional. The *respirations*, if the animal is perfectly quiet, are not particularly noticeable for any irregularity. The temperature is normal, or slightly below that, in cases which do not depend upon the presence of some other disease. There may be more or less loss of appetite, with indigestion, flatulency, and, in certain instances, even colicky pains. Urine, of a very light color, will be passed in considerable quantities. General debility of the muscular system, which often proceeds to such an extent as to simulate paralysis of the hinder part, may be shown.

In horses dropsical swellings of the limbs is not uncommon, but is seldom seen in cattle. In sheep, dropsies of the cavities of the chest and abdomen are not uncommon. When the disorder is of long standing a general shrinkage of the body (atrophy) sets in, dropsical effusions take place, the breathing becomes difficult, diarrhœa is present, the pulse gets very frequent, irregular, and weak; and the heart's action is rapid and palpitating. Death takes place from starvation and exhaustion, unless some of the mentioned complications have occurred, when there may be fainting, convulsions, or coma.

Treatment. — In simple cases we have the satisfaction of knowing that the removal of the cause, the use of stimulants and tonics, together with a careful oversight of the food to be allowed, quantity and quality, the amount and kind of exercise to be given, and the proper allowance of sunlight and air, will effect a cure, after a time. Remembering that, in simple cases, all of the trouble is directly dependent upon the poor condition of the blood which, in its turn, is due to non-assimilation of the ordinary food, an attempt should be made to begin a correction of matters by the use of such stimulants as sweet spirits of niter, whiskey, or rum for the larger animals, and brandy for dogs, in their proper doses, two or three times daily. While one or other of them often give great benefit in a surprisingly short time, they will not by any means cure; indeed their use is not well born in some instances, so that it is always better to begin by giving small doses, when, if there is marked increase in breathing or symptoms of uneasiness or colic appear, they must be at once stopped. Iron in some one or other of its forms must furnish the basis of the curative treatment.

In all the animals the tincture of the chloride may be given with good results, especially in those cases wherein the appetite is poor or fickle; begin with rather small doses, three times a day, in about four times its own bulk of cold water; or if the animal will eat a little grain, as oats, the dose may be mixed with a small quantity of them and will be eaten. As the appetite improves the iron must be increased until the full dose is reached, and this should be continued for as long as the animal seems to require it. An occasional dose of raw linseed oil, to overcome the constipating effect of the iron, may or may not have to be given. Or, after the animal begins to show a regular appetite, one or other of the following powders may be given to a horse or cow of ordinary size: Powdered gentian root and powdered sulphate of iron, of each three ounces, well mixed together and divided into twelve powders, one of which is to be given in damp grain feed, morning and night. Or, if the digestion seems to be somewhat impaired or there is marked weakness, this powder may be used: Sulphate of iron, bicarbonate of soda, of each three ounces; powdered nux vomica, powdered golden seal, of each two ounces: all to be made into twelve powders, one to be given twice daily, as above. The same treatment will give good results in sheep, if the doses of each agent are properly moderated.(See table of doses.) For dogs the stimulants may be used; the tincture of iron is good, but it blackens the teeth and the bowels are more apt to become constipated. The best method of giving the iron will be in the use of Blaud's Pills, which is a regular prescription and may be got from any druggist; the dose being the same as for humans, excepting that for very young or small dogs the pill may be cut into thirds or halves. Such a pill should be given three times a day. The food of *dogs* should also be changed at first to milk, with which a tablespoonful of lime water to each tumblerful of milk should be used. This mixture, slightly warmed, should be given in small quantities each two or three hours.

In cases of anæmia, resulting from organic disease, treatment will be palliative at the best; it will not cure.

Blood Poisoning — Horses, Cattle, Sheep, and Dogs.

Pyæmia and Septicæmia, two very important diseased conditions of the system, are *caused* by the introduction into it of putrid matters from one source or another.

Pyæmia is a purulent contamination of the blood, resulting in the formation of abscesses in various regions of the body. Purulent meaning that which has the character of, or consists of, pus (matter).

Causes. — Inflammation of bone, as induced by a blow upon it; inflammation of veins, which generally only takes place as the result of an injury to parts; certain abscesses, and certain unhealthy wounds, including particularly those about the genital organs, such as may be received by the mother at the time of the birth of the young animal.

Symptoms. — These, at the very beginning, are well marked; first there is a decided chill, followed by a *gradual* rise in the internal temperature, which generally bears a direct proportion to the degree of the chill and runs from one hundred and two, to one hundred and six. Because of the tendency to new formations of pus, at various points within the body, the chills will be occasionally and irregularly repeated; after the first two or three times of this, each chill will be followed by profuse sweatings, which will be followed in their turn by a hot and dry skin. During the chill the temperature will be higher, possibly so high as one hundred and eight; it may then *suddenly* fall even to about normal, soon to rise again, however; *and this intermittent type of temperature readings is almost peculiar to this disorder.* The membranes of the eyelids are rather sallow and, later on, may become markedly jaundiced. The *force* of the heart-beat is markedly diminished at an early period. The *pulse* is frequent, small, and occasionally intermittent, having eighty or even as many as one hundred and twenty beats to the minute, in the horse, with a corresponding increase in the other animals. It does not vary with the variations of the temperature. There is great restlessness and prostration of strength which often proceeds to exhaustion. Digestion is much disturbed, diarrhœa is generally present, and the discharges have a disagreeable character. *Respirations* are hurried, shallow, and always faster just before a chill. The appetite is lost from the first. As death approaches there is more or less delirium, shown by the animal throwing his head from side to side, or beating it upon the floor, if he is lying down. *Coma* gradually follows until the animal becomes entirely unconscious and dies.

When internal organs become sufficiently involved to interfere with their action the fact will be evidenced in complication with the other symptoms. The duration of pyæmia is variable; it is usually acute, lasting from two to ten days; occasionally a case recovers, but the termination is generally unfavorable. If death occurs within the first six or seven days it is due to the intensity of the poison; if later, to exhaustion, unless some important complication, as pneumonia, takes place. There is a form of this disease in horses, resulting from horse ail (strangles), and called bastard strangles when the disorder runs an essentially chronic course. The symptoms are much milder than in the acute form and there are sometimes intervals of apparent recovery, which, however, are usually followed by relapse and, in the end, death.

Treatment. — If recovery is to be hoped for at all it will follow only upon the most careful attention to the case. No such measures as bleeding, physicking, or blistering will be withstood. The great object to be gained is the purification of the blood, and sustaining the strength as well as possible while this attempt is being made. If there is a wound it should be dressed most carefully with some good disinfecting fluid, as one part of lysol to forty or fifty of water and, after it has been thoroughly cleansed, dusting the part over with finely powdered iodoform, and covering it with a little absorbent cotton and a bandage, whenever possible. Do not use iodoform on dogs unless they can be prevented from getting it into their mouths, for it is poisonous if swallowed. If there be an unopened abscess from any cause use warm linseed meal poultices, changing them twice a day until it "breaks" or is ready to be opened; then, after the open abscess has been thoroughly cleansed, treat as for a wound.

There is, perhaps, no other disorder in which so large an amount of stimulants can be administered with so much benefit. Give, therefore, whiskey, rum, or brandy, in as large doses, within the prescribed limits, as the case will bear. Let the animal have good, easily digested food, as ground oats, chopped hay, in which is mixed a a little cornmeal, the whole to be moistened with sufficient warm water to hold the meal to the hay. This may be given to horses, cattle and sheep, in rather small quantities, three times daily. In dogs a very small quantity, as a teaspoonful for small ones, of finely *chopped* raw, lean beef, may be given as often as each three hours, if it is eaten with relish; in addition to which warmed milk with lime water, with a little sopped stale bread, may be fed once or twice daily; or strong beef broth instead of the milk, if it is preferred. In fact, all of the animals may have milk or raw eggs added to the regular food, and be the better for it, at times. Pain, if present, is to be relieved by tincture of opium in doses sufficient to accomplish the object, but no more. If the case improves a little with the stimulants, and the appetite is retained fairly, sulphate of quinine will be found to be the best tonic, or, in small dogs, a pill of the citrate of iron and quinine, one grain each, will be good. If whiskey is being used with horses or cattle a medium dose of quinine may be added to each drench of the whiskey and water. And finally, the most important and difficult measure of all, the purifying of the blood, is to be attempted. For this purpose there is no better agent than the sulphite of soda, which should be used, from the first, in large doses, with just sufficient water to allow its being floated down into the stomach; say for horses and cattle, one ounce of the sulphite, in saturated solution, to be given two or three times a day.

Simply stated, the remedies for this condition may be said to consist of asbolute cleanliness, stimulants, nourishing food, sunlight and pure air, tonics, and the removal of all sources of further irritation, as fast and as far as may be possible.

Septicæmia is a constitutional disorder due to the absorption into the blood of a poisonous material which has been the product of decomposing animal matters; the introduction may be direct, as from a badly treated wound of any sort, or by the continuous absorption of foul gases. It is closely allied to that fever which follows wounds accidentally made through the skin, or certain surgical operations.

Causes. — Decomposing tissues which cause septicæmia may be *in* the body, as in gangrene of the lung; a retained and decomposing after birth; a wound within the cavity of the vagina, etc. Or *on* the body, as in any wound, more particularly those that have been accompanied by blows or tears, or, markedly, when an animal has been extensively burned or scalded; or outside the body, for it is said it has been introduced through the breathing apparatus, where no wound has existed.

Symptoms will vary much with the amount of the poison that has been introduced into the system. They may be exceedingly urgent, or so mild as to attract but slight attention. In a well marked case there is, at first, a chill which may or may not be noticed, so slight is it; there is a rapid rise in temperature, perhaps to 106° or 107°. The pulse is frequent, 70, 80, or 90 beats in the minute; its character is thready. The respirations are feeble, hurried, and more or less labored; the membranes of the eyelids may have a slightly yellow tinge and they will be much darker red than in health. The surface of the body is hot and dry, or, if sweating occurs at all, it will be early in the attack and very slight. The appetite is lost; the animal is dull and listless with hanging head. The bowels are quite loose and their discharge offensive in about one half of the cases, in all of the severe ones. The urine is scanty and high colored. In the severe cases the animal will die in a complete state of collapse in from twenty-four to seventy-two hours.

Treatment. — In a fully developed case of this disorder any treatment will be unsatisfactory. The surroundings of the animal are of great importance. There must be, as nearly as possible, absolute cleanliness of the wound and of the skin and hair near it. Good air, sunshine, moderate and even temperature (about 65° F.) of the room in which he is kept. The food, if he will eat, should be strong and good: in the case of horses, cattle, and sheep, *good* oats; in dogs, milk, eggs, strong beef broth, or finely chopped raw beef, in very small doses, once in three hours, if it will be taken so often. Whatever food is refused should be removed at once and not replaced until the next feeding time.

The local medical treatment brings up the entire question of antiseptics, in which class there are many agents now in use, any one of which will perhaps be as useful as another. Carbolic acid, one dram to one-half pint of water, except in dogs; lysol, which may be used in dogs, as well as in the other animals, fifty drops to one-half pint of water, will be found to be all right. Whatever is used, let the cleansing operation be *very* thorough, remembering that the object sought is to make the wound as nearly *absolutely* clean and antiseptic as possible and, until the wound remains *clean*, the dressing should be done at least twice, or in some cases, where the discharge is considerable, three times a day. If, after a fair amount of cleanliness has been attained, the wound looks pale or "indolent," it may have, with advantage, a *thin* sprinkling of finely powdered iodoform, put on just after the cleansing process has been finished.

The constitutional treatment is but to repeat, largely, the directions given for pyæmia, with this difference, however, the bowels should be freely acted upon, throughout the attack, by epsom salts. Then, in dogs, brandy, in horses, cattle or sheep, whiskey or rum, in good doses. This is to be substantiated by such tonics as quinine or salicylic acid, given in the proper doses for each animal. The sulphite of soda should be used as recommended for pyæmia, in good full doses, given three or four times daily.

Anthrax.

This is a general blood disorder of purely contagious origin having a wide distribution and affecting all animals, but most observed in cattle, sheep, and horses, and in dogs that have eaten the flesh of animals dead from it. It appears at all seasons of the year, but more extensively during, and just after, hot weather. It generally attacks a number of animals at about the same time, as on a certain farm, within a given district; occasionally a single animal may become sick with it, this especially among horses and dogs. Its contagious quality seems to be modified by climate, as its greatest ravages occur in hot, more or less marshy, districts. It appears in two forms, first as a general blood disorder *without* external local manifestations, second *with* external and easily noticeable carbuncles of larger or smaller extent. As a remarkably good instance of the behavior, uncompromising nature, and great fatality attending this disease when introduced to a northerly climate, the following notes on an actual outbreak will well repay perusal. "Prior to any outbreak of disease among the horses, several sheep had died upon the farm, which, according to the history given, had shown symptoms indicating blood poisoning. The animals were said to have refused their food, to have become suddenly prostrated, and to have been unable to walk with a steady gait. Their heads and necks had rapidly swollen, their breathing had become difficult, and they had died within a few hours. The carcasses of these sheep were taken to a near-by pasture when they were skinned and opened. Large quantities of a jelly-like material (exudation) were found around the throat and upper part of the neck, as well as in the cavities of the chest and abdomen.

After being skinned the carcasses were hung upon some trees in an adjoining orchard, to be used as food for dogs, from time to time. The dogs, being at large, tore off the flesh and carried it to different parts of the premises, especially those near to the barns. Originally there were eleven horses, of various breeds and ages, which were principally used to work the farm. The stables in which these were kept, although low studded, were clean; well ventilated above the average; and drained by surface gutters, which carried the fluid products into a stagnant pool in the barnyard. The grain was sound, the hay well got, sweet, and entirely free from the effects of "heating." The pastures were examined and found to contain no plants of a poisonous character; the herbage was good. The animals were turned at night into a field lying next to the one in which the sheep had been skinned and opened.

The water supply was found to be derived from three sources; first and principally, from the stagnant pool mentioned as receiving the drainage from the stables; second, from the house pump; and third, from a brook running by the side of the field in which the sheep had been cut up. The pool water was stagnant, black in color, and offensive, having in it a large quantity of organic matters, both animal and vegetable. The waters of the stream and pump were clear, tasteless, free from odor, and there was no apparent source of pollution for either of them.

Among the horses the disorder first showed itself on August 23d, when a four-year-old filly, pastured in a field lying next to "the sheep field," became suddenly ill and died in about twenty-four hours. The body of this animal was taken to the barnyard, skinned and opened, at a spot about ten yards from the pool. From the place where this body was opened there is a steep fall to the pool. The bowels of this animal were buried about fifty yards from the pool, but on a much higher level; the carcass was removed from the premises.

On the 3d October following a five-year-old horse became suddenly ill and died in about three hours. The body was disposed of as in the first instance. From this date other horses continued to die at intervals of a few days up to the first of November, by which time seven had died. The last five of these were skinned and buried in the "sheep field."

Two pigs, a dog, and a cat which had eaten of the raw flesh, died suddenly without having shown any symptoms of ill-health. Some portion of the carcass of the horse which died on the 3d October was removed to a neighboring village and boiled for hog food. Two of these thus fed died, and the man who had cut up the meat and boiled it died on October 23d from anthrax, without local symptoms, although there was a slight wound on the knuckle of his right thumb, with some little swelling just about it. There was no swelling of his arm.

Causes. — The disease depends upon the actual presence of a certain microscopic germ, or seed, to which the name of *bacillus anthracis* has been given. This seed may be brought to a given locality in a great many different ways, as in wet or dry hides, taken from sick animals, or, perhaps, particularly in the bodies of live animals, upon which it has not yet made a marked impression, but in which, after a longer or shorter time, depending upon the amount of infection received or the natural resisting power of the given animal, it will develop, and so create a new focus of contagion. The climate and soil conditions of the part of the country into which such an animal is taken will have a very considerable influence upon the spread of the disorder there. If it is hot and marshy anthrax will easily spread beyond ordinary means of control; indeed there are several places of this kind in the world, in which the germ is never absent from the grazing lands, and rarely from among the animals, unless they have been made immune by a "protective inoculation," as sheep have been in certain parts of France. If the contaminated animal comes to a cooler climate and gets into a pasture which is rather moist, with a clayey bottom, the disorder is to be got rid of, but at the expense only of considerable time and much working over of the land. If, again, it is introduced, as in the body of a horse or cow, to a cool locality where there is a good gravelly sub-soil, the very commonest measures will prevent its spread. Indeed, unless such single case is handled both before and after death, with great carelessness, the outbreak will generally, if the disorder is recognized early, be confined to the animal bringing it.

Symptoms. — These are so variable, even at different times, in the same species of animal, that a variety of names more or less descriptive in character, have been given to it, and this fact makes a relation of the symptoms, unless they are placed under each name, almost impossible to give plainly.

The length of the period after exposure to the contagion varies considerably and is materially affected by the natural resistive powers of the animal, the nature of his surroundings and the amount of "poisoning" which he has received. It may be from a few hours to quite a number of days.

Anthrax Proper. — The very acute form, often called the apoplectic, is rarely seen. The animal, without having shown symptoms of having any trouble, will suddenly be seized with violent muscular tremors, general or partial sweatings, tossing of the head, difficult and paroxysmal breathing, a staggering gait as he walks, or he is not able to walk at all, he falls, and after a short period of unconsciousness, with more or less convulsive struggling, he dies

In a case which is less rapid in its course, lasting for perhaps three or four days, the animal becomes drowsy and stupid with much prostration of strength; he begins to be uneasy, paws, changes his position, looks back at his flanks, in fact acts as if suffering from a mild continuous or intermittent colic. In walking the hind extremities sway from side to side, and he constantly stumbles. The *skin* is hard and dry and will be found to almost rattle in parts (crepitate) if the fingers are passed over it.

There are general or partial tremblings as well as alternating cold and hot sweats, more particularly noticeable about the base of the ears, over the chest, behind the elbows, and at the flanks. In some nervous animals the early stupor is replaced by violent excitement or irritability. The respiration, at the outset, is sometimes not much altered, at others it is hurried, or, if the brain be particularly affected and he is drowsy, it may be protracted and labored. The pulse, increased in frequency, is feeble and small, this becoming more and more marked as the disorder advances, the heart's action finally becoming tumultuous. The temperature is much elevated and, as a rule, continues so until just before death, when there is generally a marked decline. The earlier symptoms may remain stationary, or nearly so, for about twenty-four hours; the pulse then becomes weaker, the respiration more hurried, irregular (catching), and difficult. The nostrils are dilated and the visible membranes will have a bluish, livid appearance (cyanotic), or in certain cases be of a dirty yellow color marked with larger or smaller dark blood spots. There is a straw-colored fluid discharge from the nostrils which may or may not be mingled with a little dark blood. The mouth is full of a pasty, frothy material having a peculiar bad-smelling odor.

Not infrequently the termination of an attack of this form begins with a sudden apparent attack of colic, or with delirium or semi-consciousness, when, if the animal is at liberty, he wanders about and presses his head against some firm body, as a wall or fence. The colic is accompanied by tremors, or spasms, and there may be an irritable condition of the bowels, with which, rarely, the discharges may be mixed with blood.

Or the earlier symptoms may be succeeded by unconsciousness, with dilated pupils, a haggard expression of the face, and increased difficulty in breathing. When either of these last two conditions arises the animal rarely survives long, all control of muscular movements is gradually lost, he falls suddenly to the ground, where, after struggling convulsively for a short time, he dies.

Anthrax, with local complications, called by some anthracoid disease, is presented in several separately named forms, as:

Tongue Anthrax (Gloss Anthrax).—This usually begins with an attack of general feverish disturbance, after a little time of which the animal, though occasionally disposed to eat, is unable to do so, and this is generally the first attractive sign of indisposition. Examination for the cause of this inability to eat shows that the tongue is swollen, tense, and firm, with, very early in the disorder, several larger or smaller blisters along its upper surface and sides, and the mouth is filled with ropy saliva. The glands under the tongue are swollen and seem to be filled (infiltrated) with a straw-colored fluid. The blisters grow very rapidly in size and become dark red in color; the swelling of the tongue increases until that organ protrudes from the mouth, is livid in color, and indented or torn by the teeth. The ropy saliva now becomes of a rusty hue, because blood from the torn tongue or the broken blisters is mixed with it. The ability to swallow even fluids is gone; and the constitutional symptoms become more severe. The ruptured blisters show an unhealthy, angry looking surface, particularly around their edges, where they may have a rotten (gangrenous) look; they soon become coated with a soft yellowish substance, which is removed from time to time, and with each removal the size and unhealthy appearance of the sores is increased.

From pain, thirst, impeded breathing, and general discomfort, the animal becomes restless, looking anxiously about him for aid and relief, and if a full tub or pail of water is placed within reach he will plunge his head into it, up to the eyes; water served in this way should always be kept where he can get at it, as, although he cannot drink, it will give him great comfort.

Throat Anthrax, Anthracoid Angina, may appear by itself or follow, in complication, with the disorder of the tongue just described. After a period of constitutional disturbance, which may or may not have been noticed, the throat begins to swell; this progresses with great rapidity and soon produces great distress in breathing, because the structures around the upper opening of the windpipe (larynx) are seriously implicated in the general swelling of the throat, which may extend down the course of the windpipe to the chest. Accompanying this there is usually a blood-tinged discharge from the nostrils. When the swelling of the throat is extensive the disorder runs an exceedingly rapid course, the animal dying from suffocation in a few hours, in spite of *anything* that can be done.

Expressions Peculiar to Cattle.

Blackleg, Quarter Ill. — Here, in addition to loss of appetite and shivering, lameness of one or more of the limbs appears, rendering movement difficult and painful. Respiration is increased to thirty-six or forty in the minute; the pulse to one hundred or more; body surface sometimes hot, at others cold. The lame leg commences to swell and this quickly spreads to adjacent parts. If the hand is passed over this swelling there is a feeling as if air were present under the skin (it crepitates). The animal soon lies down and dies in from twelve to thirty-six hours, with or without convulsions.

Carbuncular Fever. — In other cases, after the same early symptoms of fever, swellings, perhaps about the size of an apple, appear on the back, loins, head, or neck. These are painful at first, but soon begin to spread into surrounding parts until they become quite large, crepitate, and show no further pain. The animal dies much as in blackleg.

Intestinal Form. — After the fever, a diarrhœa, often accompanied by colic, begins to show itself. The bowel discharges are mixed with blood; the external swellings are either absent or confined to the posterior back. Death occurs in from twelve to thirty-six hours after the diarrhœa is fully established.

In addition to the symptoms already described there will be an anxious expression of the face, frequent moaning, and, in older animals, bellowing, disquietude, shown by frequently getting up and down; and when down by lying with the head turned back upon the shoulder and the feet held close under the body.

Expressions Peculiar to Sheep.

Sheep, particularly the higher bred ones, are more liable to be attacked by the apoplectic form. It has been and still is very destructive to these animals in certain parts of the world, including some parts of the United States.

Apoplectic Anthrax. — There are no signs of approaching trouble. The animal lively and, so far as can be judged, in perfect health, falls down, perhaps while still grazing, and dies, within a few moments, in convulsions. Or it lies paralyzed, with hurried and labored breathing, eyes prominent, and a bloody discharge dropping from the nose and mouth. Death follows in a few hours, in the midst of distressing convulsions.

Some Cases are not so Rapid. — The sheep is dull, refuses food, carries the head low and the back "humped up," gets up and down frequently; if the flock is moving it drops behind, goes slowly and gently, perhaps staggers. These symptoms progress, tremblings set in, the animal can no longer stand, becomes more or less blind, blood is present in all of the discharges, characteristic swellings may appear upon almost any part of the body, and the animal dies in convulsions.

These symptoms, especially in hot weather, succeed each other so rapidly that the animal may die in one, two, three, or four hours. On the other hand, the disorder may be so much more mild in type that the fatal ending may be put off for a much longer time.

Carbuncular Fever. — External tumors are rarely seen in sheep, and then only about the head and udders; but a wide-spread inflammation, like erysipelas, is more often seen. After the usual early fever, which may or may not have been noticed, some of the strongest looking animals in the flock begin to limp or show more or less stiffness in walking, behind. Careful examination will show a dark red swelling inside the thigh, which crepitates upon pressure; soon extends to the belly and chest, but rarely reaches the neck. This swelling soon becomes cold, the outer skin peals off, and a bloody fluid oozes from the exposed surface; fever becomes intense, the abdomen is full of gas, and a bloody foam may flow from the mouth. Death occurs in from three or four to twenty-four or thirty-six hours.

In Dogs.

The spontaneous development of anthrax does not occur. When this animal is attacked it is because he has either eaten the flesh, or in some way become inoculated from the carcass of an animal dead from the disorder.

A dog may die of the apoplectic form. Or if not so quickly there will be a swelling of the throat, a small round swelling appears on some part of the head, usually about the lips; which in a few hours is so much increased as to occupy the entire region in which it is situated. The great swelling of the head closes the eyes, extends down the neck, along the windpipe, thus disturbing the breathing process. The whole swollen surface now becomes a red violet color, the inside of the mouth shows the same color, and from it there is a considerable ropy discharge and the appetite is lost. Prostration is present from the first; the animal will not come to the call; persists in lying in a cold, damp place rather than upon a good bed. The duration of the disease is not longer than five days, whether he lives or dies; he may die within twenty-four hours of the first appearance of the swelling.

Man.

It may be interesting to state here that the disorder in man is known as malignant pustule; and that he, like the dog, can contract it only by inoculation. It has been known as wool sorters' disease, because so many of that occupation, in handling wool from the dead sheep, have contaminated their fingers and then have scratched some part of themselves, usually the neck, with their finger nails. In some places, where the men go barelegged, their limbs have been inoculated from the bites of flies, which had, presumably, been feeding upon the dead carcasses.

Mortality. — The disorder leads to a very large percentage of death. In the apoplectic form all die, without exception. In the acute cases of fever the dead of those animals which become affected reaches to 75 or 80 per cent, and in the less severe to 50 per cent. In a general outbreak, as among large bunches of cattle and sheep, the earlier cases are usually the most fatal, while after the less susceptible animals are attacked the rate of mortality often decreases.

Treatment. — This divides itself into two parts, that which tends to limit the extent of the outbreak; by far the most valuable; and that which attempts curative measures in the animals already attacked.

First. When the animals are at grass, and the disease has already made its appearance in a case or two, or when, from any cause, its coming is feared, the soil demands the first attention. If it is damp or clayey, or at all swampy, in part, the animals should *at once* be moved to a higher location where the soil is dry and gravelly, because there the germ is less likely to be preserved and increased. In a recorded case forty animals out of two hundred had died within ten days; yet, after removal to a near-by dry pasture, and the use of antiseptics with the food and water, the attack abruptly ceased and forty-eight out of fifty that were sick at the time of removal, recovered. Damp soils, in regions where the disease prevails, are rendered much less dangerous, after a time, by thorough draining, if that be possible to their situation. In such localities the animals should be put onto as high land as possible, as the hot weather term approaches, or, if this cannot be done, and they can be housed during the night and until the dew is off, the danger will be considerably lessened. Yet in all these localities the germ will, at times, obtain access to the animals either through the herbage or the drinking water. A point of very great importance is to make safe disposition of the products and carcasses of the sick and dead animals. These should be burned, if possible, or, failing this, deeply buried and thickly covered with quicklime, and the ground so used must be fenced off and so remain for several years. Of course sick animals will at once be separated from well ones and great care used to prevent contamination, either through food, water, utensils of any sort, or the persons in attendance.

As a further means of prevention a method of inoculation has been in use, more particularly in France, for some considerable time, and with more or less success. This, in large herds, is very expensive, somewhat uncertain in its results, and should only be undertaken under the immediate supervision of a very expert veterinarian.

Medical Treatment of the Sick. — *Danger.* It must be remembered that in attending these sick animals great care must be taken, by the one doing it, against becoming inoculated, through the broken skin, as upon one's hand or other uncovered part of the body, from the blood or any other secretion or excretion coming from the sick animal. The writer was once so inoculated through the ropy saliva coming from a horse's mouth. He recovered, after a considerable time, although his attending physician said that he had no business to do so. It may be instructive to say that his treatment was by large internal doses of iodide of potassium, together with heavy burning (cauterization) of the original wound on the finger, and afterward of the secondary tumor which appeared upon the arm seven or eight inches above the wrist. The horse died within less than twenty-four hours of the time of his first seizure, from anthracoid sore throat.

In the apoplectic form nothing can be done. In those cases which do not stride on to the fatal termination so quickly an attempt at cure will, once in a while, save the animal.

Local Treatment. — The large swellings under the skin should be bathed four or five times a day, for ten minutes at a time, with *hot* water, and dressed, just after, each time, with a mixture of ten per cent carbolic acid, one ounce, and sweet oil, four to six ounces, depending upon the thickness of the skin. When the swellings crepitate further treatment of them will be useless; but the parts just beyond may be stimulated by a mixture of sweet oil, water of ammonia (not the strong ammonia), and turpentine, equal parts. This should be used by rubbing it lightly onto the parts twice a day until it begins to blister or the parts become crepitant.

In sore throat the same local measures are to be undertaken. If, notwithstanding this, suffocation threatens, no attempt should be made to relieve it by opening the windpipe below the throat (tracheotomy), as it will, at best, prolong the life no more than a few minutes.

If constipation, without colicky pains, sore throat, or large tongue be present, relief may come from the administration of a large dose of oil, as in horses and cattle of fairly good size, raw linseed oil, three pints, with a heaping tablespoonful of saleratus. In sheep the same, except the size of the dose should be limited to the largest one recommended for this animal. In dogs, castor oil and sweet oil, one-half ounce each for medium sized animals.

In Swollen Tongue, the blisters had best be opened with a sharp knife (be sure not to wound the hand, which had best be covered with a heavy leather glove, which should afterward be burned) and the cuts should then be immediately dressed with a strong solution of carbolic acid, as three drams of the acid to thirteen ounces of water. This should not be used on dogs, the cuts in which may be well rubbed with a stick of caustic (nitrate of silver). If the tip of the tongue becomes dead (gangrenous) it may be cut off with a sharp knife; the cutting should be done in the dead part as close as possible to that which is still alive.

Internal Treatment. — Very good results have been obtained by carbolic acid, in horses and cattle, as, carbolic acid one-half dram, aromatic spirits of ammonia two drams, water one pint: all to be given at a dose and repeated each four hours. For sheep the same, but in properly lessened doses. (See dose table in appendix.)

In dogs the acid should not be used; in its place give iodide of potassium in water in proper doses for the size of the animal three or four times during the twenty-four hours, for as long as it seems to be required, or until the stomach becomes too much irritated, as will be shown by vomiting, in this animal. Indeed this agent may be used in any of the animals in its proper full doses.

In blackleg in *cattle*, and the similar condition of *sheep*, as well as in anthracoid disease in horses, the *borate of soda* has given good results. It should be dissolved in water and given in full doses (see table) three times daily. It may also be given to dogs. While this is being given all other internal remedies should be discontinued. The solution should be drenched in the usual way. It may also be given to animals which have been exposed, but which have not yet shown signs of the disorder, in about one fifth the dose given to sick animals, at the same intervals and in the same way. Some animals with good appetite will eat it if the solution is sprinkled upon a small amount of grain food or meal. This, as a preventive, may be continued for eighteen or twenty days. Bleeding is contra-indicated in any case.

Rabies — Hydrophobia.

Madness, of all diseases the germs of which may be introduced into the bodies of all warm-blooded animals, including man, is perhaps the most distressing; not only because of its almost universal fatality, others are that, but because of the horrible suffering, both of mind and body, that it gives rise to. Some persons affect to believe that no such disorder exists; this opinion is against the truth and not intelligent, Others have thought that it is not a purely germ disease, but can arise, without the seed having been planted, in dogs wolves, foxes, cats, and skunks. This is as bad a misbelief as the first, but far less dangerous. It is absolutely certain that rabies cannot be set up in the body of any animal, under any possible combination of circumstances, unless its germ or seed has first been implanted by inoculation into the body of that animal. It is also true that all bites from animals that are undoubtedly mad do not set up rabies in the bitten animal. There is, or appears to be, a certain percentage of natural exemption in this as in other similar disorders, in which the systems of various bitten persons and animals do not seem to be good soil for the propagation of the seed, at the time when the inoculation occurs and the germ does not sprout. Then again it makes considerable difference what kind of animal has been bitten; if he is covered with long, close hair or, in the case of man, the bite is through the clothing, there is much less danger, because the teeth of the attacking animal are wiped and so made more or less free from the saliva, which contains the germ, just before the wound is made; then animals having blunt teeth, as horses, are far less liable to break the skin in biting than are those with sharp ones, and the longer and heavier the teeth of the biting animal, the greater danger there is that the germ will be conveyed.

Rabies is commonly thought of as belonging to and arising in dogs; this is not true; the fact being that dogs running about as they do, meeting others and having a little fight with them, as is their nature, live under circumstances which are ideal for its maintenance and spread. As a matter of fact a mad cat is by far the more dangerous animal of the two, because, at the time she attacks, she does so with both teeth and claws, filling the air at the same time with the poisonous saliva by "spitting" with greatly increased fury and with a considerable increase in the quantity of saliva at her disposal.

Causes. — These have been sufficiently described in a general way. It may be said in addition that nothing more is known as to where the first germ came from than as to where the first seed of corn came from. The dog-days have nothing to do with its spread or existence; in fact carefully kept records, in various countries, show that it as often appears in cold as in warm weather; the disease is not known in many tropical countries, whereas we know that it is most prevalent in the temperate zones. It was formerly thought that the malady arose spontaneously through restraint put upon the sexual desires of the animal. This cause was carefully and systematically investigated and found to be without any foundation in fact. Other theories of less importance have from time to time been advanced and exploded. That extension by inoculation is the only cause is well shown by action undertaken by the government of the city of Berlin, in Germany, a number of years since, when it was ordered that all dogs going at large should be muzzled. For the nine years preceding the execution of this order, two hundred and seventy-eight cases of rabies were verified there; while for the eight years immediately after its enforcement only nine such cases were found, and all of these within the first three years after the institution of the muzzling order. The germ of rabies is a fixed one and is discharged from the sick body in the saliva; it is most certainly introduced into the bodies of animals by the bite of a rabid creature; and if the wound thus inflicted be upon an exposed part, as the face or hands, in man, or conditions approaching that in animals, it is much more commonly followed by the development of the malady.

As to this, good reliable statistics, in human cases, show that of face bites 90 per cent resulted in death, in the hand 73 per cent, on the arm 28 per cent, on the legs 29 per cent. In body bites, which are usually delivered by large animals, wherein the clothing gets much torn and the bites are several in number, the death rate is 63 per cent. No authentic cases have been reported in which rabies has followed the eating of meat or the drinking of milk from a rabid animal, although many cases are reported wherein both animals and men have partaken of such viands. Notwithstanding this the practice had much better be avoided.

Symptoms. — Rabies has been described as divided into three stages and as appearing in two forms, the furious and the dumb. The change from one stage to another is not by any means sudden. The malady *never* commences with fury or with a sudden fit.

In the Horse, rabies is usually first indicated by restlessness, biting at the seat of the injury, if within reach of the teeth, as if it itched, changing position frequently, starting suddenly as if frightened. The ears are moved as if the animal heard strange sounds, and it appears as if it saw objects in the air, when there are none. Sexual desire is generally heightened in mares and stallions; urination is frequently attempted, in many cases. As the malady progresses there are quiverings of the skin followed by more or less decided convulsions; there is loss of appetite and difficulty in swallowing appears. During the convulsions or paroxysms, in proportion to their severity, the animal kicks violently, and bites so furiously at any object within reach that sometimes its teeth or even jaw-bones are broken. It will at times also bite its own body. Breathing becomes hurried; the voice, when heard at all, is hoarse and unnatural in sound. Salivation is very slightly increased. The duration of the paroxysms is variable, and during the intervals between them the animal regains his faculties more or less. Each succeeding attack of fury is more intense, and the period of quiet between them becomes shorter and shorter; the general strength declines rapidly until toward the end all power of movement of the hind extremities is lost and the horse remains lying down. Death usually takes place in the midst of a paroxysm from the second to the sixth day.

In Cattle the symptoms are similar to those in the horse, excepting that sometimes their beginning is much less well marked. Depraved or lost appetite, great restlessness, increased excitability, muscular tremblings, saliva flowing constantly from the mouth in considerable quantities, sexual excitement, especially in bulls, difficulty in swallowing, evident uneasiness at the bitten part, and seeing imaginary objects, complete the first stage. Next the periods of fury begin: the eyes are staring, bloodshot, and the pupils are dilated; the mouth is hot and foamy, the voice dull and hoarse, the animal bellows frequently, champs its jaws, paws the ground with its front feet, falls down and rolls about, or tries to break away from its fastening. Rabid cattle strike with their horns at any object within reach, with such force as often to break them off and cover the forehead with masses of blood. They will bite, but do not commonly attack with the teeth. The manure, at first expelled at long intervals and in small quantity, later on becomes liquid and passes involuntarily; there may even be extrusion of the rectum. As the third stage begins the animal shows considerable emaciation, weakness is extreme, the hind legs will not sustain, and the animal goes down, to remain so. Death follows a state of profound insensibility (coma) in from two to six days.

In Sheep there is at first diminution of appetite and chewing of the cud stops, the skin begins to itch, there is increase of sexual desire, the voice is changed, the eyes stare, and the nasal secretion increases in quantity. This is closely followed by the second stage in which the paroxysms begin and continue at intervals; the animals make unusual jumps, paw with their front feet, grind the teeth, and butt at any animal or object within reach. It is not unusual for them to show a disposition to bite people and animals; and the disease has been transmuted by them, in this way. The third stage is reached; there is considerable emaciation, debility, with following paralysis. The animal lies or falls down, there is a profuse discharge from the mouth and nose. Death takes place during a paroxysm in from the fifth to eighth day.

Furious Rabies.

In the Dog. — It will be noticed, at first, that the animal becomes dull, gloomy, and quiet, he tries to hide in some out-of-the-way place, as in a dark corner or under some piece of furniture, but even so he is restless, uneasy, and fidgety; no sooner does he lie down than he suddenly jumps up again, walks about, again lies down and perhaps assumes a sleeping attitude; after a few minutes he is up and walking about again, and so on until he finally goes to the most obscure place that he can find, and huddles himself into a heap with the head beneath the chest and front paws. Any such uneasiness as this in a dog should lead to his being carefully secured, by a good chain or otherwise, in some safe place, and watched carefully. Not infrequently there are short intervals in which he appears more lively than usual, and displays an unusual amount of affection, during which an animal under suspicion should on no account be allowed to lap the hands or face with his tongue. If at liberty he shows a disposition to pick up all sorts of foreign bodies, as straw, bits of wood or coal, stones, etc., and to swallow such of them as he can. At this early stage sexual excitement may be increased. As yet there is no disposition to bite, he will obey the master's voice, but not so quickly or cheerfully as usual, and he still has a gloomy expression of face.

Second Stage. — These symptoms gradually become intensified and the animal goes about sniffling in the corners and at the doors, as if seeking for something; he moves strangely as if haunted by fancies. When not excited by any external occurrence, he will remain still as if watching something, or following with his eye some moving object on the wall or in the air; then he will suddenly jump up and snap at vacancy as if endeavoring to catch a fly. At other times he throws himself furiously against the wall as if he heard strangers on the other side. Up to this time he eats voraciously. Soon, however, the uncontrollable desire to bite begins to show itself, and at this time, if he can possibly get away, he will travel long distances from home, biting any man or animal that he goes near so long as his strength lasts. From the commencement of this evidence of a desire to bite, whether he has been secured, or is at large, the more highly nervous symptoms begin to appear; the animal will not eat or drink; this is not that he dreads either water or food, but rather that a feeling of constriction in the throat, which prevents attempt; indeed it is not at all infrequent to see them make an effort, with their paws, as if to remove some object that had fastened itself in the back teeth or the throat. The voice becomes peculiarly changed in sound. The sight of another dog or a sudden loud noise will often induce the first real paroxysm of fury, which is to be followed by others, at intervals, until by their repetition, and perhaps the labor of traveling and the approach of the paralysis of the third stage, he will lie down entirely worn out.

During the paroxysms the respirations are hurried, the pulse is quick and hard, the temperature is increased, and the animal seizes with the teeth whatever is within reach and bites and pulls at it in a most violent manner, so much so as oftentimes to wound the mouth or break out the front teeth. These attacks of fury are increased by sudden noises or excitement of any kind, while, if the animal be kept in a dark, quiet place, the paroxysms may be very slight. If large quantities of saliva flow from the mouth it is because he cannot swallow the amount of that fluid that naturally flows into the mouth. Mad dogs but rarely show the frothy foaming mouth so commonly supposed to be a constant symptom. The paroxysms continue until finally his strength is gone, paralysis begins, and he lies down to enter upon the

Third or Last Stage. — The hind legs lose the power to support the weight, the lower jaw becomes more or less drooping, emaciation is great, the paroxysms diminish in intensity, the coat is dull, the eyes lose their lustre, become clouded and are sunken in their sockets. The breathing becomes labored and the paralysis general, the dog lies in a state of stupor, full insensibility follows, with or without convulsions, and the animal dies within two to four days of the beginning of the second stage.

Dumb Madness. — In this, which is almost a purely paralytic form of the disorder, after having a few of the first symptoms of the first stage, the voice is lost, the lower jaw drops, paralyzed; the animal can neither eat nor drink, although if given the opportunity he will try to do both. The desire to drink is so great that the whole head up to the ears will be thrust into a pail of water in a vain endeavor to relieve the intense pain due to the always open mouth and inability to swallow. The tongue may be fairly natural in substance, or swollen; it is covered by a brownish material, and a stringy, gelatinous looking saliva is present in a moderate quantity in the mouth and throat. Anything like the tendency to follow imaginary objects, run away, desire to bite, and the frenzied paroxysm does not appear and the dog is generally quite passive; there may be some swelling about the throat and the tongue is pushed out of the mouth. The other symptoms, as rapid exhaustion, loss of flesh, paralysis of the hind limbs and finally of the whole body, as well as the progress of the whole course of the disorder, is as rapid in this as in the furious form. While it is true that in dumb rabies the animal evidences very little if any desire to bite, and that he cannot do so if he would, because of his inability to use the lower jaw, it is well worth while to remember that the saliva is just as dangerous in the one case as the other. Death occurs generally about the fourth day from the visible commencement of the attack.

Treatment. — After a dog has clearly shown that he is undoubtedly rabid he should at once be killed, *unless he has just previously bitten some person or other animal;* in which case he *must* be *securely kept alive* until it is found whether or not there has been any mistake about it; for among people a nervous disorder (false hydrophobia), which is purely imaginary but nevertheless sometimes fatal, follows the bite of a dog which was not only well at the time of the biting, but which lived in health for a long time afterward. If a dog is really mad he will die from the disorder in a few days, and the fact, if the dog is allowed to live to the end, will be known and measures can be taken to prevent its development in the bitten person or animal. If, on the other hand, the dog lives for more than four or five days it is *certain* that the bitten person is in no danger of having contracted the disease from his bite. The nervous dread will thus be allayed and the person's life saved.

If an outbreak of rabies happens in a neighborhood all dogs there, that are allowed to go at large, should be muzzled, and the muzzling should be continued at least thirty days after the last known case has been taken care of, for the period of incubation is not always a short one. This, however, is a matter which can be taken care of by the proper State or town officers only.

If a dog or other animal, which is known or thought to be rabid, has bitten other animals or men, the bitten one should *at once* be subjected to measures which will lessen the likelihood of inoculation. *These measures are* sucking the wound, squeezing out the blood and perhaps the virus from the wound while it is covered with water or held under a "tap"; twisting a piece of rope or other strong, suitable material around a part between the wound and the heart, as closely to the wound as possible; cutting out the bitten parts with a sharp, clean knife, or, best of all, burning out the wound *thoroughly,* with a red-hot iron or a stick of lunar caustic. If the burning or cutting out the part is done before any of the virus gets into the circulation there will be no further danger; but it must follow within a few minutes of the infliction of the bite, or it will be too late.

No Curative Medicines, to be used after the disease has shown itself, are known, nor should any attempt be made to administer anything of the kind to sick animals; the risk is entirely too great.

Between the time of the bite and the development of the disease there is always a period of incubation of longer or shorter duration. If, during this period, before any of the symptoms are shown, a bitten person can be put into the hands of a good Pasteur institute and there subjected to a series of proper protective inoculations, it is almost certain that no hydrophobia will result from the bite. The lives of valuable dogs may be saved in the same way. There are such institutes in New York City and in Chicago.

Glanders and Farcy.

This is another of the diseases which depends upon the introduction of a special germ into the blood of a susceptible animal. Horses, mules, asses, and men are the most susceptible to its influence; other animals in their order of susceptibility are cats, dogs, goats, rabbits, and sheep. *Cattle* are entirely exempt.

It has been well described by various authors since the year 330 A.D.; but it was not until 1664 that any suggestion was made of its being contagious. This suggestion was not well accepted and gave rise to a very considerable controversy which was continued until in 1882, when it was forever set aside by the undoubted discovery of the germ giving rise to it.

Its geographical distribution is very wide, but its greatest ravages occur in the temperate zones, while it does not flourish in very hot or very cold climates.

Nature. — Glanders and farcy are one and the same disease; contagion from one form may produce the other form, or both forms may exist together in the same animal at the same time. The term *glanders* is used when the expression of the disorder takes place in the nose and lungs; *farcy,* when its poisonous effects are on the more external parts of the body, appearing to be just under the skin.

Causes. — At the present day the one accepted cause is *contagion,* but as the germ has been absolutely proved to be able to survive outside the living body, infection may come from other objects than a sick animal; it will therefore, not infrequently show itself in animals which it seems impossible to believe have come into contact with the germ. Still, so well established is the fact, that all such incidents must be looked upon as having the usual origin, however impossible it may be for us to trace it. But while the presence of the germ is the essential cause of glanders there must be, as in other similar disorders, an individual receptive condition; the condition of the animal must be such that the germ will grow after it has gained access to the body. This natural immunity is fairly large, as for instance, out of 138 horses equally exposed by cohabitation with glandered horses, no more than 21 became infected; about 15 per cent. Direct experimental inoculation with the poisonous material, the most certain of all ways of introducing the germ, has produced the disease in but 32 per cent of the inoculated animals.

The causes which predispose the system to the growth of glanders poison, the germ having been received, are impure and re-breathed air, seen especially among horses and mules which are taking long sea voyages, especially if the weather is so bad that hatches have to be kept closed for a considerable part of the time; in badly ventilated mines and stables, especially cellar-stables in which there is no sunlight. *Damp*, cold, and drafty stables greatly favor the spread of the disease, as do new brick or stone stables, until the mortar becomes perfectly dry.

Debility from continued ill-health, low feeding, or overwork, lessens the power to resist the effects of specific poisons, because in such instances there is always an excess of waste material in the blood which furnishes an abundance of food for the germ to live and grow upon. So notorious is this fact that in the old days, when overthrifty animals were kept at work much more freely than they are now, this disease was looked upon as being the natural winding up of pretty much all of the debilitating diseases in the horse. Modern practice shows that, if the germ is excluded, debilitated horses do not die of glanders unless they have had it from the first.

The channel of infection varies in different cases. In direct experimental inoculation the morbid process develops first at the point of operation and spreads from there to the nearest lymphatic glands, which with their veins are closely distributed over the entire body and in, practically, all of its tissues. It has also been communicated, experimentally, by mixing the nasal discharges from a diseased animal with both the food and water given to another, as well as by passing it directly, enclosed in a perfectly tight capsule, into the stomach of the non-diseased experimental animal. It is possible that the germs are carried in the air *for short distances.*

The ordinary methods of infection, then, may be said to be the eating or drinking of contaminated food and water; to some little extent by breathing contaminated air; or rather unusually by rubbing the nose upon, or licking with the tongue, any object upon which a diseased animal may have deposited the virus, as the edge of a public drinking trough, on a pail, hitching post, or in the mangers whereat a number and constantly changing variety of horses are fed, as in stables attached to hotels throughout the country, or in the "baiting" stables of the large towns and cities. It must also be remembered that the germ will live on inanimate objects outside the bodies of animals, and that in this way harnesses blankets, tools, or anything which has been used upon or been in contact with a glandered animal, is capable of contaminating a healthy one.

While the germs are most plentifully concentrated in the discharges from the nostrils and farcy sores, and practically all of the poison giving rise to new cases is distributed from them, no part of the body can be considered free from the poison. Glanders has been experimentally communicated by blood, tears, saliva, sweat, urine, and milk.

Symptoms. — Glanders and farcy are each capable of assuming an acute and a chronic form. With us chronic glanders is much more commonly met with than the acute; while in farcy the opposite of this is the rule.

Acute Glanders. — The symptoms are both general and local; the appetite is capricious or entirely lost; there is depression and rapid emaciation; the hair becomes dry and unhealthy looking; the animal shivers at intervals; the internal temperature ranges generally from one hundred and four to one hundred and seven, possibly a little higher, at which high point it will remain with very slight changes for some days, if the animal lives so long. In cases where the temperature does not reach to but little more than one hundred and four, the variations will be greater from time to time.

The heart-beats are strong and jerking. The pulse is frequent, quick, and small. The membranes of the eyelids are dark red in color. The membrane covering the partition between the nostrils is intensely red, and may look swollen; sometimes there is a little bleeding from it. The breathing is hurried and irregular and may be as fast as forty or even fifty in the minute, and is, not infrequently, accompanied by a soft snoring sound; there may also be, less frequently, great distress for breath.

In from two to four days, unless the animal dies from intensity of the fever before then, the fever diminishes somewhat and the *local symptoms* show themselves. Small yellow-headed pimples appear upon the covering of the partition between the nostrils, on one or both sides; they may be scattered or lie so close together as to appear like larger or smaller patches, of a yellowish gray color, slightly raised above the general surface. In one or two days these pimples (nodules) break and open sores appear in their places; the bottoms of these sores show fairly large patches of "proud flesh," having a reddish violet color, that bleed upon the slightest touch. These sores (chancres, they are called) are numerous, spread rapidly, run together and form large sores having the same characteristics and showing no tendency to heal.

With the appearance of the sores there comes a discharge from one or both nostrils, which, at first, is usually a yellow, sticky fluid, soon, however, becoming thicker, purulent looking, more or less streaked with blood or of a deep rusty color, and increased in quantity; nose-bleed may occur at intervals.

Accompanying the development of the sores, on one or both sides, depending upon this condition in the nostrils, a swelling appears under the lower jaws and close to the inner side of the bones, which, at first, are rather soft, movable, and quite tender upon pressure. In a few days the borders of these enlargements become more distinct, harder, less movable, not quite so tender, and assume, after a little further time, the appearance described for the chronic form, as do the other symptoms, if the animal survives the acute attack.

Acute glanders is not infrequently accompanied, preceded, or followed by a complication of farcy, when lymphatic vessels in various more external parts of the body become inflamed, corded, and have open sores upon them. In cases which do not pass into the chronic form, the nostular openings, the walls of the nasal passages and the upper extremity of the windpipe, in the throat, may become more and more swollen until breathing becomes difficult in the extreme, and suffocation puts an end to the life.

Other complications may occur, as intense inflammation of one or more joints; the fever, which may at first have subsided somewhat, upon the appearance of the eruption in the nostrils returns, when feebleness and prostration will become extreme. Pneumonia may be set up, which, with glanderous deposits that may have formed in the lungs, renders respiration more difficult and prostration more extreme. New sores may constantly form in the nostrils, the discharge from the nose constantly increase, the lungs become more or less filled with pus, and a profuse diarrhœa sets in to hurry death to the rescue.

The fatal termination may occur in from two to fifteen days; and may be due to the intensity of the first fever, exhaustion, suffocation, or the lung disease, or a combination of the second and last.

Chronic Glanders may continue for months or even years and the horse exhibit so little ill-health as to be kept at full work during the time. The symptoms may be local and general. Local symptoms are a nasal discharge, sores upon the partition between the nostrils and enlargements under the jaws, which are more or less firmly attached to the inner side of the lower jaw-bones.

Unless the case is one which began with the acute disorder, the first attractive signs will usually be those of an ordinary, chronic catarrh of the nasal passages, the discharge coming from one or both nostrils, most frequently from one only. At the very first the discharged material is rather clear, somewhat thicker than water and very sticky, but afterwards it becomes purulent, glutinous, and adhere to the skin around the nostular openings, forming there soft, greasy feeling crusts of a more or less deep brown color, which adhere somewhat unpleasantly to the fingers, when touched. There is a time just before the brown or rusty color appears when the discharge may show a rather greenish tint which has been largely accepted as being the characteristic color of the glanderous discharge. This is an error, for in several other disorders which are accompanied by a purulent discharge from the nose, notably, when the roots of double teeth are diseased, this same colored pus is not infrequently seen.

A case beginning as chronic may finally become acute, an early indication of which is that the nasal discharges become streaked with blood in small quantities. As a rule the discharge is *without smell.*

Sores upon the membrane covering the partition between the nostrils are not commonly to be seen unless the nostrils have been first dilated with the fingers of the examiner. In a supposed case of glanders this examination must always be made, but before doing it great care must be taken to see that the skin upon the fingers and hands and face is absolutely tight, that there are no possible opportunities for inoculation either directly, or indirectly by the horse "blowing his nose" during the search. The sores are usually few in number, in one nostril only. Their favorite situations are on the partition between the nostrils, well up in the visible part of the cavity. At times they may be found upon both sides and to a considerable extent. Early in the case, or when a new sore is forming, one or more small yellowish or whitish pimples will be seen on the membrane. They are from the size of a mustard seed to that of a small pea, and perfectly defined. In two or three days the pimples disappear and in their places there is a small concave depression on the surface of the membrane. These are the beginning of the sores, and the first thing that, in this respect, will show absolute glanders, for harmless pimples are sometimes seen upon this same part. At this period the sore has a sharply defined border, is roughened at the bottom, is of a dull gray color streaked with blood-colored lines; or, if the attack approaches the acute form, these sores become bright red or violet in color. The sores, once formed, begin and continue to discharge a considerable quantity of pus, which, not infrequently, forms a yellow, slightly attached soft scab over it. The process continues, the sores enlarge with, as a rule, no tendency to heal; occasionally, however, their edges begin to contract, its depth is filled up by "proud flesh" which finally becomes covered with a hard scab, the whole process ending in the formation of a roundish or star-shaped scar, the white color of which shows clearly on the red of the membrane surrounding it. The appearance of such a scar should not be looked upon as indicating that the animal has recovered, for while its presence shows that a check of some sort has occurred in the progress of the malady, and an effort, on the part of nature, to repair this effect of the disorder, it does not, in any way, indicate full recovery; on the contrary it has been shown over and over again that the systems of these animals retain, in one way or another, the virulent properties of glanders, from which all the ill effects of an acute attack may be conveyed to another.

Enlarged Glands under and between the lower jaws are inseparable from the sores in the nostrils, although these last may be so high up in those cavities as to make it impossible for the examiner to see them. The swellings may appear upon either one or both sides, and be smaller or larger than an English walnut. At its first appearance it may be a little soft and painful upon pressure, but it soon becomes hard, immovable, and *perhaps* fixed tightly to the skin covering it and to the jaw-bone.

General Symptoms are not usually well marked; debility, unthriftiness, uneven or diminished appetite, dulness, with slight fever, may be observed at first; but, even so, as soon as the local symptoms are well developed, whatever there may have been in the way of general disturbance not unusually subsides and the animal, except for the local signs, seems in good health. Sooner or later, however, it may be weeks or even many months, this stage of the disorder gives way and, perhaps because of the great amount of the poison which has been gradually accumulating in the system and almost imperceptibly weakening the vital forces of the animal until he has become better soil for the propagation of the germ, the full effects of which have been so long resisted, the acute form suddenly appears and the animal may die from it within a few days; or farcy, in one or other of its forms, may show itself.

Although the nasal discharges, the peculiar sores inside the nostrils, and the characteristic swellings under the jaws, may be looked upon, when existing together, as a sure indication of the presence of glanders, it is by no means rare to meet with cases in which one, two, or even all of these signs are absent.

Dry Glanders, as such cases are called, is by far the most dangerous form the disorder can assume, so far as the spread of the malady is concerned, as they may otherwise offer nothing, even to the rather close observer, that will lead to the suspicion of its existence in them, until after a very long time; yet they readily infect healthy horses and it is just these cases which maintain and propagate the disease in stables, in those instances in which outbreaks occur from time to time, often at long intervals, without any assignable cause. A post-mortem examination of the lungs, liver, spleen, bronchial or abdominal (mesenteric) glands, one or all of them, will show, in these instances, the presence of small, hard, round, objects, varying in size from a double B shot to a small pea, more or less plentifully distributed throughout their substances; and it is in these nodes that the seeds of the disorder reside.

The thermometer offers the only known means through which one of these cases may be selected out from a stable full of horses; and its use, for this purpose, must be so precise and long continued as often to make the examination either without any sure result or quite expensive. Still the author has often employed it, and always with good result, when the necessary conditions have been fulfilled.

To apply this test the temperature of every horse that lives in the stable must be taken at the same hour each morning and carefully recorded. The animals may then go to their usual work for the day. The temperatures are again to be taken at the same hour every evening, preferably between five and six o'clock and not until every animal has been in his stall for at least two hours. The feeding must be done at the same hour every day and the food must be of the same materials.

Any animal that shows an even normal temperature, both morning and night, for five days, may be looked upon as not having any form of glanders, and need not be examined further. If any animal shows an abnormal temperature, if only of one degree, *constantly*, either at the night or morning examinations, he becomes suspicious, should be taken from work and placed by himself for further similar examination. If he remains suspicious a veterinarian should be called and put into full possession of the circumstances; he will probably resort to what is known as the mallein test. The greater expense of the whole procedure comes through taking all of the horses away from a part of the day's work; still, if a case of glanders is found, this will be fully repaid as time goes on.

Acute Farcy. — The earlier symptoms are those of a more or less severe fever, accompanied by shivering fits, an unhealthy looking coat, considerable thirst and loss of appetite, with a temperature of from 103 to 105 or 106, rarely as high as 108. The pulse and breathing movements are faster in good proportion to the amount of fever present, nothing more.

After a short time of this, perhaps a day or a little less or a little more, the early local symptoms appear. These are generally, but not always, confined to the limbs; there is a wide-spread general swelling of the skin, extending to the parts immediately beneath; the local surface is hot, painful, and, if a leg is implicated, *great lameness*. This condition may not be persistent from its first appearance, it may come and go to a certain extent for a while, but with each new onset all of the local symptoms will be markedly increased.

After a little, following the swellings, the hard lumps, called farcy buds, begin to show themselves, together with hard "cords" running from them. The oncoming of these "buds" and "cords" may be sudden, that is, the swollen and painful condition may have existed for a day or two without having shown exactly when the buds were to appear, when, rather unexpectedly, they are pushed beyond the general surface and attract the attention. In size they vary from that of a pea to that of a cherry; their edges are not sharply shown, and they are located either in the skin, the tissues immediately underlying it, or, rarely, to some extent, in the muscle itself.

In a few days the buds will begin to soften at the center of their tops, the skin gives way and open sores are formed which are known as "farcy ulcers." They are deep, angry looking, have ragged edges, and are disposed to increase in size by the constant giving way of their margins; they discharge a grayish white, creamy-like thick liquid, somewhat tinged with blood, and which, to a small extent, sticks around the edges of the sores, forming often a brownish colored crust. If the sores are near enough to each other they may run together, thus forming a large, foul-looking, many-pitted ulcer, of an irregular shape, and a surface that bleeds easily.

The "Cords" are full, hard, and painful to the touch; in a little while after they appear their surfaces become swollen at various points; these swellings soften, after a time, open, and discharge a yellowish pus-like fluid. They may, as in the case of the "farcy ulcers," join each other after a time, thus making a very unhealthy looking sore, rather long in proportion to its width, the inside of which is filled with a sticky, blood-stained, pus-like fluid.

During this whole process there is a fever of a remittent type, repeated shivering fits and patchy sweatings; great and rapid loss of flesh with prostration of strength, which soon becomes extreme and the animal dies exhausted. Acute glanders often accompanies and helps to terminate this form of the malady.

Chronic Farcy.—The symptoms here are almost entirely local, there being very little, if any, fever shown. Or if, as rarely happens, there is slight fever, it will be of a well-marked remittent type, more so than in the acute form.

The local symptoms will be those of the acute form very much lessened in force, speed of development, and general behavior. The location of the "buds" is, that, generally, where the skin is thinnest, as the inferior part of the chest, inside the forearms, along the belly, over the flanks; and inside the thighs. The "buds" are, as a rule, in the skin; the larger ones may extend to the deeper tissues. Their course of development is variable; they may be widely separated and appear about the same time, or the first crop may be joined in a few days by others, which will probably be smaller in size. Their edges are sharply defined; hard at the bottom, and, as the period of opening is reached, they become more and more pointed in shape at the top. When the "ulcers" are formed they discharge a thin, pale, yellowish pus and have but little, if any, tendency to heal. The "cords" may not be present at all or, if they are, it is more likely that they will be shown after the "ulcer" has been formed. The whole operation is a sluggish one, and in certain rather rare cases the "ulcers" have been known to heal and the horse to return to apparently good health; still, an animal of this kind is not a safe one to put among others that are healthy.

Treatment naturally divides itself into the preventive and the curative. Prevention will consist in, so far as possible, keeping all diseased animals, or anything that has been used in connection with them, from coming into direct or, to a certain extent, indirect contact with others, as already indicated. All diseased or suspicious animals should at once be taken away from the stable in which an outbreak has occurred, and so kept until all suspicion has been set at rest. The premises should then be disinfected in the following manner: the mangers as well as the walls from floor to ceiling, and the floors themselves, in the infected stall, and perhaps for two others on each side of it, should be well scraped, next thoroughly washed by having water, at as nearly the boiling point as possible, freely and thoroughly dashed over them. The premises should then be allowed to become *thoroughly* dry. After this is done some chemical means of disinfection had best be used, although this is not so important as in some other infections, as the germ of glanders is easily killed by heat and dryness. Fumigation with formaldehyde gas is undoubtedly the best of all measures of this kind where it can be accomplished properly; or chlorine gas generated from black oxide of manganese and hydrochloric acid, or in any other way, of which there are several, is an efficient disinfectant for the purposes under consideration. It need hardly be said that during this operation all doors, windows, cracks, or openings of any kind, must be carefully stopped up; and everything that is alive taken out of the building and kept out for at least two hours after the last of the gas used has been generated. The whole process should take at least six hours. It is not practicable in ordinary stables or in barns that are open to the roof.

It will be as well, perhaps, in these instances, after the cleansing operation first advised has been *thoroughly* done, to give the stalls, walls, floors, and partitions two or three good coats of strong whitewash which contains six to eight ounces of crude carbolic acid to each gallon of the whitewash. All stable utensils, harness, clothing, etc., had best be destroyed, boiled in water, or put into a closed room which can be kept at a temperature of about one hundred degrees of *dry* heat for from five to seven hours.

Much might be said here in relation to the better means to be used in stamping out the disorder entirely, as several similar diseases among animals have been, in this country; but when that effort is made, the work should be under the supervision of the general government. It is at present impracticable, for one great reason at any rate: *all* of the cases cannot be recognized by any possible means that have as yet been discovered, but the writer has been able to stamp it out and keep it out from among something over nine thousand horses belonging to the same corporation, contained in some forty odd different stables, in several of which glanders had been present for a long time and had previously killed a large number of animals.

Curative Treatment. — In some of the states and territories any person who knows of a case of glanders is obliged, under penalty, to report its existence to the local authorities, who then, generally, take summary possession of the animal and kill it out of hand, in which cases they disinfect the premises. If, however, medical treatment is desired, and it had best always be used in cases that are no more than suspicious, there is nothing better than the old "farrier's ball"; this consists of powdered sulphate of copper and powdered gentian root, equal quantities, three ounces, powdered Spanish flies, one dram; the whole to be thoroughly mixed together while dry; it is then to be mixed and rubbed together with a sufficient quantity of molasses to make a mass of about the consistency of rather hard putty; this mass is then to be divided into twelve equal portions and each portion rolled in a sheet of very thin brown paper until it is formed into a "ball," which will be round, about two inches in length and three quarters of an inch in diameter. One of these "balls" is to be given night and morning, just after the horse has eaten, for as long as may be required. As there is quite a little risk of inoculation in giving the ball, unless one is proficient in the practise of placing it at the extreme back of the tongue, it will be better to shake the powder, properly divided into twelve parts, up with a teacupful of molasses and water and to drench in the usual way from a bottle. A heavy dogskin glove had best be used in either case. Some animals will eat the powder, if it is well mixed with a quart or so of dampened grain feed.

In addition to this it will be wise to give one ounce of the sulphite of soda, mixed with a cupful of water, two or three times a day.

Many an animal has apparently recovered from chronic farcy, and it is reported upon good authority that a few cases of acute glanders have seemed to get well under this treatment. Still it must be remembered that such "recovered" animals are, perhaps, not unlikely to suddenly become centers of a new outbreak; and that attendance upon them, unless all precautions are very carefully attended to, is a dangerous matter, as a man will easily become inoculated through broken skin, and that glanders in him always proves fatal.

Tuberculosis — Consumption.

This is an infective disease and for its occurrence depends *entirely* upon the introduction of a germ (bacillus tuberculosis) into the system of an animal which contains good soil for its propagation and spread. The germ was first absolutely discovered in 1882.

The malady is of very wide distribution and of ancient history. It affects, most commonly in the order given, cattle, horses, dogs, and sheep, of the animals now under consideration; but it is, undoubtedly, the cause of death among men and cattle to a larger extent than any one other disease.

In Cattle, tuberculosis has been known and fairly well described, at various intervals and under various titles, from the time of the promulgation of the Mosaic laws to the present day; and during all of this long period, notwithstanding all of the measures that have been undertaken to prevent its extension and to cure those affected with it, both cattle and men, it has claimed and still claims its thousands and thousands of victims each year.

Causes. — The germ is most commonly transmitted by the living together of the affected and the healthy. It has repeatedly been shown, if a consumptive animal is put among a herd of healthy cattle, that the disorder will begin to show itself among them all, to a greater or smaller extent, after a shorter or longer time.

It is very probable that the greater part of the new infection takes place through the air; not that the germ, as such, is exhaled into the air by the sick and inhaled by its neighbor, but that in coughing, or running from the nose, the diseased animal has deposited in the barn or about the premises a certain amount of fluid material containing the seed, and that after the fluid has become perfectly dry, the germ, which is very, very small and capable of living, under nearly all usual conditions for a long time, rises into the air with the other dust and is inhaled into the air passages and lungs by others. Other methods of infection are by cattle licking each other, the lodgment of the infected dust upon the hay, which is afterward "fed out"; in which instances the first noticeable signs will be in the throat or some part of the digestive organs. Milk from a sick cow will produce the disease in calves or pigs to which it may be fed.

The proper soil for its germination is induced by constant stabling of the animals, especially in such buildings as are badly ventilated and drained; feeding innutritious and watery food; overproduction of milk or young; and in breeding. While it is an undoubted fact that a tendency to the malady is inherited from the parents, because of their constitutional lack of stamina being transmitted to the young, it should be distinctly understood that the conveyance of the disorder itself, by these means, is extremely improbable. When instances happen in which it seems as if this *must* be the cause, it is far more likely that the young animal has been allowed to suckle from a diseased mother, or else it has been allowed to remain in a contaminated building.

Symptoms. —While not always so, it is generally true that tuberculosis is of slow development and runs a chronic course. The symptoms vary somewhat, depending upon its location in the body.

In the Lungs there is at first a weak, short cough, which, however, as the disease there makes a considerable progress, becomes deeper, more difficult, and paroxysmal. It is more likely to be shown early in the morning, after drinking, or whenever the animal "gets up"; enforced exercise is apt to bring on a paroxysm. Breathing is more or less hurried and finally becomes distressing. *The pulse* is generally undisturbed at first; it afterwards becomes more rapid and small, either in proportion to the amount of fever present or to the increasing debility. Its examination has no particular value.

The Temperature is at first not very markedly disturbed; there may be a rise of one degree noticeable at the latter part of the afternoon. Later it rises to one hundred and three or one hundred and four, and may be, rarely, as high as one hundred and six or one hundred and seven; but even at this stage it is apt to go up and down; the highest readings of the themometer will generally be got quite early in the evening.

Nutrition is sometimes seriously interfered with; at others, the animals keep in good flesh, have healthy-looking coats and bright eyes, even though the lungs are extensively diseased.

In cases where the high temperatures are long maintained the animal gradually loses flesh, the hair becomes dry, and the skin hard and tight over the ribs; the appetite gradually lessens; the digestion is upset; the secretion of milk, which may have been remarkably good up to this time, falls off considerably, the eyes lose their luster, are sunken in their sockets, and bunches may or may not appear upon various parts of the body, as on the neck or in the throat, more commonly.

Abdominal Tuberculosis proceeds much in the same way as that of the lungs, excepting there is no cough; and that cows are more apt to come in heat frequently, are less likely to conceive, and abort more frequently.

Tuberculosis of the Udder is not uncommon and it should be *fully* understood that milk from such animals should not be given to any others to drink and should not be used for cheese or butter-making, because it is surely full of the germs, whatever may be thought of the milk, for these purposes, which is drawn from consumptive cows in which the udder itself is not diseased. There is at first a widespread, rather firm, but painless swelling of a portion, or more rarely the whole, of the udder. After a little these swellings become harder and harder, the milk grows more watery, until finally the diseased portions become "as hard as a rock."

General Tuberculosis very frequently happens. In it the symptoms partake of a mixture of all of those described, in a variety of combinations, together with, sometimes, lameness, swelling of joints, and enlargement of the ends of some of the bones.

The fact of the matter is that it is often extremely difficult, by any physical examination that anybody can make, to determine whether an animal is tuberculous or not, unless indeed by using the tuberculin test, which, in proper hands, is almost absolute. There are hundreds upon hundreds of animals that, after a most careful and skilful physical examination, will seem to be in "the pink of perfection," that, upon examination after death, from some accident or for beef, will be found to have been tuberculous to a degree that will cause the greatest surprise.

Treatment. — This again divides itself into the preventive and the medical.

Preventive treatment is so large a matter, so far as the entire extinction of the malady is concerned, that it can only be undertaken by the general government, and the proper time for this is "not yet."

So far as individual herds are concerned, all animals that are known to be diseased should at once be removed from the others, the bad cases killed, and the bodies properly disposed of. The remaining ones must be kept in the open air as much as possible; if they can be turned into hill pastures for the summer and kept in a field with adequate shelter through the winter, the arrangement will be the best possible and certain of them may recover. The question here is, will the ends warrant the loss and trouble of the undertaking? It will perhaps be better to make them into beef as soon as possible and accept some present loss rather than a possible total one at some time in the future.

The absolute disinfection of premises is a matter of considerable difficulty and expense, especially when animals are kept in large, open barns, more or less full of fodder. The formaldehyde gas will have to be used in addition to the other means of disinfection already described. Some cattle owners who have undertaken to "clean up their herds" have found it less expensive and troublesome to build new "cow sheds" and put into them only such animals as are found, by application of the tuberculin test, to be free from the malady, and to introduce no new animals, except those of their own raising, until after they have passed that test.

Medical Treatment. — Among all the drugs in the list there are none that will "cure" consumption. If, however, it is desired, for any especial reason to undertake such measures, there is nothing better than cod liver oil and iodide of potassium, given two or three times a day in fairly full doses. It is undoubtedly true that life may be considerably prolonged, in this way, in many instances. If the digestion becomes upset by these measures the doses are to be lessened. The food should be very nutritious.

The tuberculin test consists in injecting a certain amount of Koch's tuberculin serum beneath the skin when, after a proper length of time, the disorder, if present in the animal, even in the smallest degree, will be declared with a certainty which is most remarkable; in proper hands and under favorable conditions, easily obtainable, its declaration is practically absolute. As the test is really a chemical one, it should be done with all the precision and delicacy that such tests usually demand, in order that sure results may be reached.

In the Horse tuberculosis does not appear very frequently, although it certainly does so at times; nor is it certain whether the germs giving rise to it in them come from cattle or men. It may gain access through either the breathing tract or the stomach. The feeding of tuberculous milk from cows has produced it in foals.

That horses do not usually furnish a good soil for propagation is shown by the fact that it is extremely difficult to make a successful experimental inoculation in them, with poisonous material taken either from cattle or men.

Symptoms are not distinctive. When the lungs are infected the symptoms will probably be those of a more or less chronic bronchitis: cough, emaciation, which is rapid at times, increasing debility, loss of appetite, difficulty in breathing, and frequent urination.

The temperature is uneven but does not rise to as high a point as in cattle. The pulse furnishes no particularly valuable signs, simply keeping pace, in the usual way, of fever and increasing debility.

When the digestive apparatus is affected, the symptoms will be those of cattle in the similar situation. At first constipation and diarrhœa will alternate, afterwards an uncontrollable diarrhœa appears which rapidly so debilitates the animal that he dies from physical exhaustion.

Treatment should be directed to allaying the symptoms of the various disorders of the lungs or digestion, as they may appear, under rules given for the various disorders in another part of this volume. If consumption is actually present the animal cannot live, although death may not take place for from six to twelve months, or even longer.

In Sheep the malady is rarely seen; it exists, perhaps, in about fifteen hundredths of one per cent. Infection is from living with diseased cattle and from drinking milk from them. The symptoms are those of cattle, but particularly great loss of flesh, white visible membranes, and cough.

In Dogs consumption is not infrequently seen, but still it does not exist among them to anywhere near the extent in which it is present in cattle and men.

The germ is introduced either through the nostrils, as when an animal lives in the house or room of a consumptive man and inhales the dust, or through the stomach, in those instances wherein the dog is allowed to lick up the sputum coming from a diseased person, or to eat food that has been chewed by them.

Symptoms vary greatly, depending upon the location and extent of the disorder. The symptoms usually shown are those of some chronic affection of the breathing apparatus with a persistent cough. If the animal is to die from it he loses flesh rapidly, coughs harder, breathes with more difficulty, loses strength, as first shown by the uncertain movement of the hind legs in walking, there is irregular fever, and, finally, an exhaustive diarrhœa.

Treatment. — In the early stages, in fact before it can readily be ascertained that consumption is really present, the dog should be treated, for the symptoms presented, under the general rules — good nourishing food and not too much of it, cod liver oil, and a pill of citrate of iron and quinine; one grain of each for small dogs and two grains of each for large ones; a pill to be given three times a day. Good attention must be paid to the digestion; if too much constipated, increase the dose of the oil, or give an ordinary tablet of cascara, one half for small animals, each evening, for as long as is required. Diarrhœa will scarcely be present so long as the iron pills are used, until the case has progressed so far as to be hopeless. A long standing case cannot be cured; and in any recognized case, because of some danger of communication to man, it will be much safer to destroy the animal than to treat him.

The tuberculin test sometimes gives good results, but is rather apt, in dogs, if the disease be present, to give rise to symptoms that end fatally.

Lockjaw — Tetanus

This is another infective disease, the presence of which depends upon the introduction of a certain germ (discovered in 1884) into the blood of a living animal. The germ lives freely outside the body in the soil, particularly those that are rich in animal manures, perhaps especially that of horses. Its geographical distribution is practically unlimited, although it is much more prevalent in hot than in cold climates.

Any of the animals may have it, but it is most frequently developed in them in the following order: horses and mules, sheep, cattle, and dogs.

Causes. — The germ is most frequently carried into the body by wounds, penetrating through into the blood, made by objects having infected soils attached to them; or when, after a clean wound has been received, it becomes contaminated by a direct application of dirt to it, as from street dust, or a soiled handkerchief, piece of dusty bagging, old dusty cobwebs, dirty hands and finger nails, etc. It is not probable that it is conveyed through the stomach.

The germs having been received into the wound remain there and the body becomes affected through a poison developed by them at that spot; this is a remarkable variation from the usual course pursued in diseases of this class.

General Symptoms. — After the wound has been made, and in a period lasting from six hours to six weeks, generally within a few days, muscular spasm begins to be shown, more particularly in the neck and head, spreading from them to the trunk and legs. The nose is at first protruded upon an outstretched stiffened neck, the eyes are drawn back into the sockets, which throws the haw up over them, the back and legs are more or less stiff, and the whole picture presented is one peculiar to the disorder, and when once seen will not be forgotten.

Because of the spasms of the head muscles the power to chew food is very much interfered with or lost entirely; if the muscles of the throat become involved, swallowing becomes more or less impossible. The back may be curved up or down, it is most generally down; and the belly becomes tucked up and the animal constipated; the legs, almost or quite incapable of bending or being bent, are stretched out both behind and forward and appear like four bracing stakes. If the muscles of the ribs become implicated, *breathing* is shallow and frequent. The *pulse*, although the artery feels hard under the finger, is not particularly disturbed in number, even though the breathing movements are as many as forty-eighty to the minute. The *temperature* at first is but little, if any, elevated; if it does rise, the elevation does not remain above the normal for any length of time together, unless the animal is growing worse. Sweating is at times profuse.

The spasms of the muscles, though never entirely absent, occur with greater intensity, at irregular periods, and their frequency is increased by great light, any sudden or continued noise, as well as by the approach of strangers, or if he falls down, as he is not unlikely to do at any time, if his legs become very stiff. During the paroxysms all of the symptoms are considerably increased in severity, and if the repetition of them becomes frequent or they remain at long periods at a time the animal will die.

As the disease grows worse and a fatal termination is to be the result, all symptoms increase in intensity; the breathing is very rapid and may be from eighty to one hundred in the minute; the pulse hard and from seventy to ninety in the minute, in horses; the *temperature* becomes elevated to one hundred and six or one hundred and seven; and much higher just before and, for a little while, just after death, so high, possibly, as one hundred and twelve. The brain generally remains clear almost to the end, and because of this and the great suffering, such an animal, if not mercifully destroyed, is a pitiable object.

In Cattle the particular differences to be noticed are the frequent drawing back of the lips; the back is arched; the hurried breathing does not appear so early in the attack, gases form in the paunch so as to greatly distend the belly, in a few days, and the spasms are not so frequent or severe as in the horse.

In Sheep, the legs, beginning with the hind ones, are stiffly stretched out, the animal does not move, the tail is stiff and carried straight out. After a little time the animal falls down and lies with the legs stiffly straightened out, with the neck drawn backward, which increases the difficulty of breathing.

In Dogs general tetanus is rare, so much so that it was formerly supposed this animal was not affected at all by the disorder. Still, later experience has shown they do have it, at times. The affected dog will show a stiff, elevated head and neck, the ears stiff, anxious expression of the face, a puckering into folds of the skin of the forehead; the legs are stretched out and stilty, and the voice is lost because of the stiffness of the muscles of the jaw and throat.

The Mortality is very great: in horses from seventy-five to eighty-five per cent; in cattle from seventy to eighty; in sheep about one hundred, or nearly all of them; in dogs it is much smaller. The periods at which the fatal termination is reached are variable. A quickly developed case never recovers. Horses live about a week, although the period may be anywhere from one day to two or three weeks. Recovery in about three weeks.

In Cattle the course is not so rapid and the disease runs its course in about three weeks. A fatal end may come anywhere from two days onward, *after full establishment* of the symptoms. Recovery is from two to three weeks.

In Sheep death usually takes place in about one week, although it may happen in two or three days.

In Dogs the rapidity of the course will be about as in sheep; the end is not so universally fatal. Recovery may take place in from twelve to fourteen days.

Treatment. — The wound should at once and for all be cleansed as thoroughly as possible under the given circumstances, by removing all foreign substances that can be found; syringing out thoroughly and repeatedly with a solution of one part of corrosive sublimate to one thousand parts of water; and cutting away or burning out the tissues that may have become contaminated, as far as possible, with a sharp knife, a red-hot iron, or, perhaps better than either, a *few* drops of pure carbolic acid, or, in dogs, pure nitrate of silver instead of the acid. This cannot be done always, either because of the stiffness of the animal or that the attempt to do so will cause strong and persistent spasms, in which cases this part of the treatment must not be undertaken. The animal should then be placed where the light is dim, the air good, as far removed from noise as possible, and seen only by his nurse, who should always be the same individual, an acquaintance if possible. For it is through careful, quiet nursing *only*, that recovery may be hoped for. Horses had better be put into slings at once so that they may be saved from falling if the legs become stiff.

The food should be very nourishing and made quite soft by the addition of boiling water, and allowed to get cold before being offered to the animal. Ground oats, corn-meal, the last bulked with a *little* wheat bran, if necessary; no hay or anything that must be chewed much before it can be swallowed, excepting a very little *freshly* cut grass, if it can be obtained. All food not eaten should be removed before it gets soured. For dogs, strong beef broth, milk, and raw eggs. The food should be given often, each two or three hours, and in small quantities at a time. Fresh water in large quantities should always be kept within easy reach of the animal. No attempt to relieve constipation should be undertaken unless considerable annoyance is caused by its presence. Manure may be removed from the larger animals with the hand and arm; injections of strong, warm, soapy water may be given the smaller ones, but either operation is apt to excite them considerably.

Medication, if used to any considerable extent, will do more harm than good, because its administration adds so much to the general excitement. The writer has had very good success with cases in which he has used the sulphate of atropia, a product of the belladonna plant. Three grains of this agent, for a good-sized adult horse, is folded in a piece of *very* thin tissue paper one inch square and slowly and carefully pushed into the mouth through the space between the front and back teeth, and allowed to remain there. It may be given two or possibly three times a day, at equal intervals. The dose of this very poisonous drug must be varied for the different animals and for young ones. (See dose table at end.) Further medication is not recommended.

In a stall or box in which a case of this disorder has been kept, and after the animal has been removed from it, the floor and walls should be thoroughly cleaned from all dust and manure, by dry scraping and brushing,

There is a serum (anti-toxin) the use of which will prevent the development of lockjaw in instances wherein the germs have gained access in the usual way. But in order that it may be surely effective it must be administered before any symptoms of the malady are shown; it probably possesses no curative powers when the disease has developed.

Pox — Variola.

Variola affects horses, cattle, sheep, and dogs. It is of ancient history and widely extended occurrence. Sheep-pox and small-pox (of man) are rather dissimilar to the others and were probably brought to us from the extreme East.

Causes. — It is a contagious infective fever accompanied by a rash which ultimately produces larger or smaller pustules that, in the end, form scabs and drop or are rubbed off. The contagion is both direct from a sick animal or through the air in infected premises. It is contained in the pustules, the scabs, blood, secretions, excretions, expired air, and the scurf from the skin. The contagious principle remains active for a considerable time and, in sheep particularly, may be carried comparatively long distances. One attack is all that the same animal may be expected to have.

General Symptoms. — The disorder will begin to show itself in about one week after it has been "taken," when there will be a marked feverish attack, accompanied by some signs of nasal catarrh and general redness of the skin. Suddenly, upon this red surface, little red spots will begin to be shown which soon look like pimples; these, growing harder, get to be about the size of a millet seed or a little smaller, and are surrounded by a red ring. After a few days the tops of the little pimples lose the hardness and bright red color and take on the appearance of small blisters of a bluish white color. This eruptive stage takes from six to eight days and, with the filled blisters, the pocks are fully matured. Following this, the blisters turn into pustules; this operation takes place within two or three days, at the end of which the fever, which disappeared in a marked degree with the beginning of the eruption, now reappears. The pustules dry up little by little into, first, yellowish crusts, afterward becoming dark brown scales, which fall off leaving behind white, glossy, or brownish red scars. This last process lasts from three to five days.

Horse-pox is not as commonly seen as formerly, and when it makes its appearance does so in certain districts, not in single cases. It may be transmitted to sheep, cows, and men.

Symptoms. — There is at first a rise of temperature and loss of appetite. This is soon followed by a swollen, hot skin at the back of the pastern bones, under the fetlock, that may, in certain instances, extend upward to some little extent. This same appearance of the skin may also be rarely noticed on other parts of the body, especially in the neighborhood of the nose and lips, sometimes extending into the mouth and nostrils. With the swelling of the skin at the pasterns the animal becomes quite lame and if made to move lifts his feet high off the ground. After a little the blisters appear and the disorder progresses as described. The whole process will occupy some three or four weeks when all will, generally, be right again.

Cow-pox. — The contagious principle is not so easily and widely spread as that of sheep, and is mainly carried by the hands of the milkers going from diseased animals to the healthy ones. There is also some reason for believing that a person, recently vaccinated against small-pox, may convey the disorder to cows by milking them. Cow-pox can be transmitted to sheep, horses, and men.

Symptoms. — Fever is absent or only slightly marked, there may be some slight disturbance of the general health, best shown by the decrease in the amount of milk given, and the milk may be thinner. It is possible that the slight decrease in the milk is because of the pain caused by handling the sore teats, in milking. The pimples may be larger but are less in number and vary somewhat in color in different skins. The whole process lasts about three weeks in a given animal, but its progress through a herd is slow, as all of the cows, with very few exceptions, will sooner or later be attacked. Bulls, oxen, and young cattle are less frequently affected.

Sheep-pox is of more importance than that of any other animal. The infectious principles are conveyed in the air as well as being fixed; its vitality is so great that a building into which it has been introduced will remain infected for five or six months. It may be conveyed, by an animal that has had it, for six weeks after apparent recovery. The germs are also conveyed by infective sheep, by dogs, wool, skins, manure, fodder, the clothes of people, railroad cars, etc.

Symptoms. — Within from four to seven days after exposure there is shivering, fever, depression, shown by a hanging head, considerable weakness, and loss of cud and appetite. The temperature rises to one hundred and four or one hundred and five, perhaps a little higher; pulse and breathing are more frequent than normal, in proportion to the fever present. In a day or two the red spots, etc., appear upon the skin where the wool is not thick, especially upon the head, near the eyes, nose, and mouth, or on the inner surface of the legs, chest, and belly; rarely, it may become more widely spread.

On the fifth day after the eruption the pimples become whiter and show the red ring; if they lie closely, as on the head and about the eyes, the neighboring skin becomes very much swollen. The temperature now falls and within a few days the pimples increase in size and contain fluid. On the sixth or seventh day after the eruption the pocks are "ripe," from which time onward the pimples become pustules; the temperature again rises, the symptoms of acute catarrh of the breathing apparatus and the eyelids appear, with a more or less abundant fluid discharge from both the nose and mouth, and there is difficulty in both swallowing and breathing; diarrhœa may appear. The head becomes swollen, the skin has a bad smell, the pustules wither and dry up, the brown scales appear, finally leaving the white or red scars. The disorder continues in an ordinary case for about three weeks. Unfortunately there are many variations of the usual type, in this animal, some of which, not infrequently, cause a large death rate, which is not at all usual in the other animals. Several of the pocks may run together and form a large, unhealthy sore and the sheep die of blood poison. Lung or throat difficulties (croup) may appear and death be caused by suffocation, or if the animals live they are left greatly exhausted, in an unhealthy condition and perhaps lame or blind.

If the disorder is introduced into a herd, only two or three per cent escape infection, the mortality is from ten to twenty per cent under ordinary circumstances, and fifty or more per cent under unfavorable ones

Dogs seldom have pox, although it is possible for them to do so. When it occurs the course is light, regular, and is followed by recovery in from two to three weeks.

Treatment. — As the disorder runs a regular self-limited course there is not much to be accomplished by curative measures. The skin can be kept clean and a little cooler by washing the diseased portions with saleratus (bicarbonate of soda) water; one tablespoonful of the saleratus to each one quart of water used; or with a solution of borax in water, as strong as it can be made, using the crystals of borax, not the powdered agent. In large flocks individual applications or administrations of any kind become practically impossible. In the few cases wherein throat, lung, or other complications arise, it may be possible to treat the disease which has been set up, under the general rule; as, for instance, the confluent variety, sometimes appearing among sheep, may receive the treatment laid down for septicæmia, etc. The food should be sound, clean, and nourishing; the premises as well cleansed and disinfected as possible, and there is no better method for this purpose than that recommended in glanders, excepting that the carbolic acid must be used in the strength of six ounces of the pure acid to each gallon of the whitewash. It may be applied, one coat at a time, at intervals of a week or ten days, until after the last case has recovered; and in a sheep-barn for a longer period, as already indicated, unless the formaldehyde gas can be used, which is extremely doubtful in this class of buildings. Protective inoculation is possible.

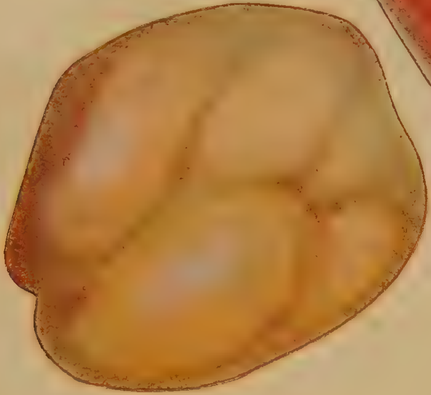
Lump Jaw — Actinomycosis.

Under the first of these titles a disease of the jaw-bones of cattle has long been recognized as occurring more or less frequently.

Causes. — The disorder is due to germs which grow upon various plants, some of which, as barley, rye, and some kinds of grasses, are used in their dried state as fodder, and either lodge and remain in the mouth or are passed on into the digestive organs; or the germs, developed in the usual way, may get mingled with dust, inhaled, and produce their peculiar growth in the lungs. It may also appear in the teats of cows, or gain entrance through a wound upon the surface of the body. It is not contagious, as from the animal, but, contrary to the usually accepted opinion, *it affects not only cattle, but also horses, sheep, and men.* General symptoms are not present unless the growth has taken place in some vital organ, in a sufficient degree to interfere with its full and proper action. Then, the symptoms will be referable to those affecting that organ, and the cause, if really actinomycosis, can no more than be guessed at. Local symptoms are a larger or smaller lump with a fairly smooth surface, which may

EXPLANATION OF (colored) ILLUSTRATION OF COW.

1. Brain.
2. Small brain.
3. Spinal column and ribs.
4. Nostrils.
5. Jaw.
6. Tongue.
7. Trachea of windpipe.
8. Gullet running to stomach between the lungs.
9. Heart.
10. Lungs showing bronchial tubes.
11. Liver.
12. Stomach.
13. Large intestines.
14. Small intestines.
15. Mesentery.
16. Bladder.
17. Left kidney.
18. Rectum.
19. Vagina.



THE POUCH, OR "RUMEN," REMOVED TO SHOW OTHER DIGESTIVE ORGANS LYING UNDER IT. (ITS POSITION BEING INDICATED BY DOTTED LINES)

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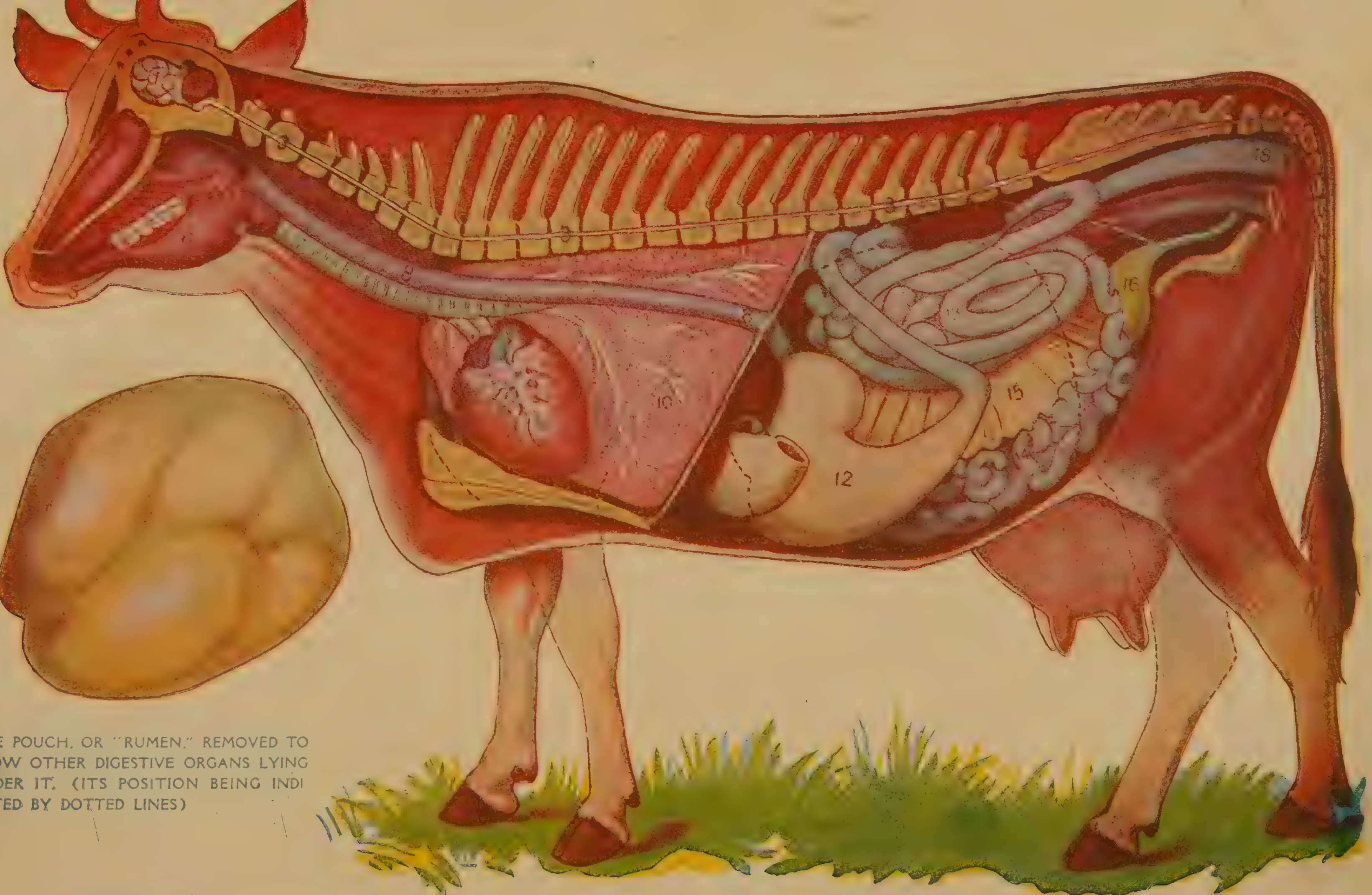


COW

be either harder or softer; as very hard when a bone, as the jaw-bones of cattle are affected, or softer when other tissues become implicated.

In Cattle the lumps usually appear in the upper or lower jaw bones, where they may grow to a large size and implicate both the soft and bony tissues. At other times and frequently, the tongue becomes diseased, when it takes the form of a hard inflammation of that organ; this was formerly called wooden-tongue. It begins as a collection of round brown spots which are elevated above the surface; the cheeks may be similarly affected. In the throat the lumps are much softer, have a smooth surface, and vary in size from a pea to a large egg. In which case there is more or less difficulty in both breathing and swallowing. Deeper than this (they have, rarely, been found in the liver, and frequently in the lungs) their presence is only to be "guessed at," as has been said.

When in the skin and tissues immediately underlying it, the lumps usually feel firm and elastic; in size they may be as small as a small nut or larger than a man's fist; they may be the color of beef; covered with a brown crust; or with a pus-like material.

In Horses the disorder has been found to be present in the bones, tongue, windpipe, the glands under the jaws, which swell, as described in glanders, for which they have been mistaken, *and on the end of the cord, after castration.*

In Sheep the lungs as well as some of the muscles are rarely affected.

Treatment.—Formerly, unless the growth was located near the surface and could be easily reached and cut out, the case was given up as hopeless. And while an operation may be done now, if desired, it has been found that the internal administration of the iodide of potassium is *an absolutely specific remedy.* Each cow should be given daily, for fourteen days, one-half ounce of this salt dissolved in one-half pint of water. The dose may be reduced by one or two sixths when recovery begins to show itself, which should be within the fourteen days or perhaps less. In particularly obstinate cases a dose of four ounces a day may be given for a short time. The daily dose should be divided into two parts, one given in the morning, the other in the evening.

There is a great value in the use of this drug, the administration of which is generally harmless, in helping to find out whether the trouble in the internal organs is really the suspected one or not.

Strangles—Horse Ail.

This is an acute disorder, the occurrence of which depends upon the presence of a germ which is found in the discharges from the nose of an ailing animal. It will probably live for a short time and under favorable conditions, outside the body, and be spread in the form of dust. When the poison is experimentally inoculated into the inside of the nostrils, strangles is produced; when into the skin it forms a local abscess.

Causes. — It chiefly affects young animals or any horse whose vital forces have been weakened by cold, catarrh of the upper air passages, bad climatic conditions, especially the sudden changes of the weather taking place in the spring or, to some extent, in the fall; overfeeding without sufficient exercise, continued over-exertion, long journeys on sea or land, general irregular stable management, and, perhaps more common than all, the bringing of horses from the country into large city stables, in which the germs are seldom absent, and where the animals are collected together in large numbers within a small air space.

The germs are usually absorbed through the breathing tract; they may also gain access by way of the digestive organs. The poison enters the blood and raises the temperature of the animal before the local symptoms appear. One attack protects from a second one for at least two years, generally through life. Strangles are not unlikely to show various complications.

Symptoms. — In an ordinary case the appetite will be lessened or lost, the legs, especially the hind ones, may swell a little and the animal will be listless and dull. If the temperature is taken at this time it will be found to be one hundred and three to one hundred and five, although the pulse and breathing have not yet become disturbed. Following this, after a few days, a discharge will take place from the nose, which, at first clear and sticky, soon becomes of a grayish or yellowish green color and more or less like pus; its quantity is much more profuse in young than in old animals. At the time when the pus-like discharge begins, a swelling will be found under and between the lower jaws. This enlargement, which is that of one of the glands, feels hot and is tender to the touch, and while small at first it may increase rapidly and to such an extent as to fill up the entire space between the jaws.

While, in rather rare instances, the enlargement gradually disappears and the parts return to their usual appearance; as a rule, however, soft places begin to show on its surface and it terminates in an abscess which, upon bursting or being opened, discharges a great quantity of pus, leaving a cavity or pocket which ultimately heals and all of the parts return to their usual condition.

The first rise in temperature, as described, is soon followed by a drop of from one to three degrees, and the lessened heat remains until pus begins to form in the swelling, when it again shows an increase which is maintained until the abscess has discharged, when, in favorable cases, it will fall within a short time to the normal point.

The pulse will show no material change until the abscess begins to form, when it may become as frequent as fifty or sixty beats in the minute. A higher pulse rate is not met with unless the strength of the animal has previously been weakened in some way, or when complications arise in the course of the disorder.

The breathing will not be materially changed unless some of the discharge gets into the throat, when there will be a cough at varying intervals; or when the bunch, because of its location or size, presses against the upper end of the windpipe.

The animal will not eat well until the abscess has discharged its contents and lost its soreness; this is because of the pain caused by movements of the jaws. During the period of recovery there is often a considerably increased flow of urine, which should cause no uneasiness and needs no treatment. The average death rate is small, not *over* three per cent, and under proper treatment should not begin to reach even to that.

As has been said, strangles not infrequently becomes complicated, and it is these that are most to be dreaded.

First and most common. The poisonous effect becomes extended to the region around the upper end of the gullet and causes there an inflammation, the symptoms of which are difficulty in swallowing, heavy drooling from the mouth, and a very moist, suppressed cough. This is soon followed by a swelling of the glands which lie under the ears and just behind the upward curves of the lower jaw-bones, in the neck. These swellings, tender upon pressure, frequently become very large and give rise to extensive swelling of the skin and upper neck. Pus quickly forms in these enlargements, the surface of the swelling softens, at one or more places, opens and discharges freely; this is the most favorable termination.

In other instances, the great pressure of the swelling upon the soft structures within the throat causes them to give way, at one point or another, when the pus discharges inwardly and is very apt to fall into the lungs; and gives rise to pneumonia, gangrenous lungs, and a fatal termination.

Second. The inflammation set up by the poisonous material in the back part of the nose may extend to the upper end of the windpipe, producing a distressing whistling cough and very difficult breathing. Such a case, after recovery, may leave the horse a permanent "roarer" or "whistler."

Third. An inflammation of the skin of the head and face may take place, with the formation of a large number of small, shallow abscesses. In this way the lips may become so swollen as to be as hard as a board, and the nostrils so closed as to make breathing difficult.

Fourth. Strangles may be complicated with pyæmia. (See article on pyæmia.) It then is called *bastard strangles.* The pyæmia is generally of the more chronic form, the animal grows thinner and thinner and becomes much "tucked up" in the belly. Abscesses continue to form inside and, more rarely, upon the outside surface of the body.

Fifth. The malady may assume a chronic form; the nasal discharges continue, much flesh is lost, and symptoms of chronic indigestion follow.

Death, when it takes place, as it is apt to do to a considerable extent in some of the complicated cases, is usually caused by general blood-poisoning. It may happen from suffocation, rarely.

Treatment. — The animal should at once be placed, as far as possible, into a clean, exceedingly well ventilated stable, but free from drafts of air; and given good sound nourishing food; hay, *freshly cut* grass, and at least six quarts of the best oats per day; if he will eat nine quarts, with relish, so much the better, as the disorder is very debilitating and strength is kept up more naturally and fully in this way than by any other and more artificial means.

Internal medication is not particularly useful, as the fever will disappear of itself as soon as the abscess is opened, and nothing will be gained by trying to "cut it short." The animal will be a little more comfortable, however, if he is allowed to drink water in which powdered saltpeter has been dissolved. The saltpeter may be used up to one ounce a day, and eight or ten swallows of the water given every thirty to sixty minutes.

The greatest endeavor of treatment should be directed to bringing the swelling forward to the formation of the abscess: Usually there is nothing better for this than the careful and persistent application of hot poultices to the parts; the poultice may be made of flaxseed meal, or, just as well and at much less cost, "oil meal," which is obtainable from any grain dealer. This should be mixed with boiling water and made as soft as it can be to stay in place; it may then be spread upon any strong cotton cloth, and when cool enough put over the swelling and held in place by a home-made hood, which will come nearly down to the nose and be tied closely under the jaws; if holes are cut, at where the ears come, the poultice will not shift so easily. A new hot poultice should be put on three times daily, remembering that the sooner the abscess can be brought to a "head" the quicker the case will get well and the less danger there will be of any complication. If the swelling is slow in coming to the desired point, it may generally be hastened by rubbing onto it a very little plain blistering ointment; as, powdered Spanish fly one dram, to lard one-half ounce, mixed thoroughly together and used once as directed. As soon as the abscess softens at any point it should be carefully opened with a clean, sharp-pointed knife, little by little, until the pus begins to flow, when the wound may be carefully made a little larger. After it has been opened and thoroughly emptied by gentle pressure, it may be washed with warm water and the poultice again put on twice a day for one, two, or three days, until the pus is all discharged, when it may be taken off and the parts washed clean once daily with a mixture of one part of lysol to fifty parts of cold water; or a solution of carbolic acid of the same strength may be used instead of the lysol. In cleansing the part it will be best to use a sufficiently large piece of absorbent cotton, which can be immediately burned when it is finished with, a new piece being taken each time.

Complications must receive the treatment given to similar troubles, as they appear. The extended abscess, under the ears and back of the jaws, should be taken care of as described above.

Strangles in Dogs is said to have been noticed. The symptoms will consist of a discharge from the nose, a swelling of the lips and head, due to the formation of small abscesses, which may lead to pyæmia.

Treatment will consist in bathing the swollen parts with quite warm water for ten or fifteen minutes at a time, three or four times a day, to hurry the softening process as much as possible, opening the abscesses as soon as they are ready and keeping the parts clean with the *lysol* solution. The food should be good, given in small quantities three times a day intsead of once, and consist largely of milk and finely chopped raw, lean, beef with some stale bread crumbled into the milk and fed when the bread has softened. In addition a pill of citrate of iron and quinine, two grains each for large dogs, half the size for small ones, should be given two or three times a day. If constipation is persistently present, give a medium sized dog, at one dose, one-half ounce each of castor and sweet oil, varying the quantity up or down in proportion to the size of the animal and the degree of constipation present.

There is no connection between strangles in horses and the so-named disease of dogs.

Pink Eye — Influenza, Epizootic, Etc.

Affects horses, men, and perhaps cattle. It has been known to exist and is described from as far back as the fourteenth century, during which time, even up to the present, it has been and is called by a great many different names. In fact it seems as if more than one malady had been looked upon as being that now under consideration. Some of these have been sifted out and are now placed where they belong, until, at the present time, influenza may be described as being an infectious disease which is subject to several important complications.

Causes are simply those of a highly infectious principle, or germ, the exact nature of which has not yet been fully discovered; it is passed along from horse to horse or from locality to locality in an evenly progressive way until, within a very short time, large numbers will at times become its victims. At other times it will not affect more than one or two horses in a stable, although, at the same time, a large number of the stables in a given town will, each of them, contain a few of the cases. It may be rife in a given locality, while in another, not more than a few miles distant, there will not be a case. At other rare intervals of time it will extend over a whole country, as was well shown in the United States in 1872 to 1873.

The poisonous principle seems to be easily carried in the air, which has become mixed with that breathed out by a diseased or convalescent animal, for a shorter or longer distance at various times, and under conditions not understood. Sometimes the poisonous quality survives but a short time in such air; at others it not only seems to survive for a longer period but to be capable of being widely extended, as has been shown. The same peculiarity concerning the life of the germs within the living bodies of animals seems to exist at times.

The germ from contaminated air is inhaled, becomes absorbed, and a new case is created. While one attack is usually all that comes to one animal, a second has been known to occur. Mules and donkeys are equally affected with horses; and there exists a not entirely unfounded impression that horse distemper has been conveyed to dogs and men.

Symptoms. — In from four to seven days after the horse has "taken" the malady there will be, at first, loss of appetite, nervous depression, as shown by a drooping head and slow, unwilling movements. The internal temperature is high, perhaps, from one hundred and three to one hundred and five; the frequency of the pulse is not increased in proportion to the temperature, it may show as many as fifty beats to the minute; the breathing is comparatively slow; and the *lining of the eyelids have a yellowish tinge.* After this initial stage, which is of varying lengths, from a few hours to a day or a little more, the already high temperature is suddenly increased and may reach one hundred and seven or one hundred and eight degrees, at which high point it remains, with slight variations, for from three to six days when, rather suddenly, it drops to the normal point. At the time of the second rise in temperature the pulse increases in frequency to from sixty to seventy or even, in desperate cases, to eighty or one hundred beats in the minute; it generally continues frequent for some little time after the temperature has fallen. With all of this there will be a discharge from the nose, thin at first, thicker and mixed with pus later on, a little swelling of the glands under the jaw, and slightly hastened breathing with a little cough. There is generally a considerable loss of flesh.

Second. In some instances the nervous depression becomes extreme, when the fever is at its height; the animal not only holds his head down, but, added to this, he appears as if half asleep and is stupid; tremblings are seen on the body and legs; the hind legs move unevenly, he "knuckles" at the fetlock joints; and in a few cases, paralysis of the hind legs may take place.

Third. At times a considerable digestive trouble will be shown, which is probably caused by the considerable effect which the poison has upon the nervous system; the mouth is dry, the tongue "coated," and the horse yawns frequently. Swallowing is not easy if the mouth is very dry; constipation is present and what manure is passed is in small, dark-colored balls, which are covered with more or less slime (mucus). Later on colicky pains and diarrhœa may be shown, which is often accompanied by severe straining.

Fourth. The disorder not infrequently takes the form of complication which has become widely known as "pink-eye," called by some the rheumatic form of influenza, wherein the eyelids swell so much as oftentimes to entirely close or even turn them inside out to some little extent; there is more or less discharge, and if the lids are opened sufficiently, as with the fingers, the outer covering of the eye itself will be seen to be more or less fully covered with a white film. At other times, if the outer covering be sufficiently clear, it may be seen that a yellowish substance, coming apparently from around the pupil, has been deposited at the lower margin of the eye, just inside its outer covering. These appearances of the eye need not cause alarm, because they generally disappear as the general symptoms improve. These "eyes" are usually accompanied by more or less swelling of various joints, especially, perhaps, the hocks, although any joint may show it; the swellings are painful and the animal is very lame; this also generally disappears as the general health improves.

Fifth. Large dropsical-like swellings, without much, if any, pain, frequently appear in the legs, along the belly, and include the sheath, or udder. These should cause no anxiety as they will disappear as the case recovers.

The average duration of an attack is about fourteen days; some may recover as early as the sixth day, while others will run on for three weeks. The mortality is small. *It should be especially remembered* that other and graver complications may arise if the horse is continued at work during the early stages of a light case of influenza; these are: pneumonia; a weak heart; severe brain trouble; and inflammation of the bowels.

A good rule to follow is to take a horse away from all work as soon as he stops eating, and not to put him at work again until it is known what the trouble is.

Treatment. — As uncomplicated influenza runs a direct, mild, and self-limited course, good nursing with healthy surroundings, good ventilation, good drainage, the careful selection of good sound food, given in prescribed quantities, under the requirements of the individual animal, are of chief importance; and the better all this is done the less danger there will be of troublesome and dangerous complications. So far as medication goes there is no better mixture, for general use, than this: Sweet spirits of niter, seven ounces; fluid extract of belladonna, one ounce; dilute sulphuric acid, forty drops; sulphate of quinine, two scruples. Mix all in a bottle and shake until all of the quinine is dissolved. The dose will be two ounces of the mixture given in tumblerful of cold water morning and night; an extra dose may be given at noon, when there is much depression; the bottle should be shaken each time it is used.

Complications must be treated under their rules, as they arise. Whiskey or digitalis for weak hearts; digestive troubles, with saleratus and common salt; inflammation of the eyelids with argyrol, twenty-four grains mixed with water, one ounce. A few drops of this mixture should be put into each eye three times daily, using an ordinary "dropper," which may be had at any drug store. The persistent high temperature may be lowered by giving acetanilid, or some other similar febrifuge. The stable had best receive a good disinfecting when the trouble is over and before new animals are put into it.

Cattle occasionally develop influenza. In them it generally takes the form of "pink-eye" although the trouble with the joints is generally more widespread and painful; the temperature rises to one hundred and four or one hundred and six; the depression and other general symptoms are those described for the horse. The duration is from two to four days only, and the attack usually ends in recovery.

Treatment will be as for horses.

It is not now considered that influenza of men and animals are identical, although many recorded instances seem to indicate that it has been conveyed backward and forward among them in certain individual instances. It is certainly true in by very far the greater number of instances that there has been no intercommunication whatever.

Formerly, a great number of cases of pneumonia were thought to arise in complication with certain outbreaks of influenza, and the cases were described as being of such origin and admixture. Recently this condition of affairs is apparently becoming to be considered as a separate malady and, by some, it is now described as:

Contagious Pleuro Pneumonia of the Horse.

For all practical purposes it may as well still be looked upon as a pneumonia occurring in the course of an attack of influenza; and *treated* under the rules given for *lobular pneumonia.* It is true, however, that greater care should be used to prevent its spread to other horses, not only those that are well, but those already sick with an ordinary influenza, by quickly and strictly separating such an animal from among others; and furthermore it will not be well for a man to shut himself up too closely with a case of this kind, or to remain, for hours together, "sitting up" with him at night in a small stable.

This caution is given in view of happenings within personal knowledge of the writer. There is no danger whatever excepting under the above-named circumstances.

Distemper in Dogs.

This always has been and still is, regarded as a very dangerous malady. It has an ancient and varied history, but is still without any specific treatment and attended by a large fatality.

Causes. — It is a contagious, infective disease, the germ of which has not, as yet, been fully identified. The poison is fixed, extends through the air, and is carried by all sorts of material that has been in contact with the sick. It is easily communicated, not only by direct cohabitation, but through the air of buildings, even when the sick animal is kept at some distance away from the well ones, and great pains taken to prevent the two from being handled by the same person. About two thirds of the cases occur in animals under twelve months old. Although the susceptibility seems to decrease considerably after, then dogs of any age, beginning with puppies two weeks old, may have it. While one attack generally frees the animal from future ones throughout his life, the rule is not without its fair share of exceptions.

As in all contagious maladies there must be a good soil for the growth of the germ before it can produce its results, and while some dogs seem to be always free from its effects, others that are moderately so may be made susceptible by being reduced by improper care, as exposure to cold and wet, too frequent bathing, over feeding, too little exercise, improper food, living in a dark or badly ventilated place, as a cellar, in fact by anything that will tend to lessen his vitality. The breed seems to have nothing to do with the susceptibility, excepting that in the way of in-breeding and with puppies that are from parents who are without sufficient out-door exercise, the vitality is always lowered in the progeny.

Symptoms. — Although the disorder may appear accompanied by such a variety of symptoms, because the peculiar poison affects, at times, so many different organs, as the breathing tract, lungs, bowels, brain, spinal cord, eyes, and skin, there will be noticed, at the very beginning, if the animal is at all closely observed, a few symptoms that are in common, at first, to all cases; as dulness, slow, rather lifeless movements, small or fickle appetite, which may be accompanied by vomiting, trembling or shivering without apparent cause, unhealthy looking coat, and a tendency to tire easily. If, under these circumstances, the temperature is taken and found to be above one hundred and three, the case should be looked upon as being "suspicious."

After this, for a short but variable time, the temperature will drop somewhat for a while, and it is a feature of distemper that the animal will seem so well for a day or two, as to give the impression that he is entirely or nearly well.

The first well marked symptoms are, generally, a discharge from the nose and eyes, which, to begin with, may be clear and sticky, but which soon becomes thick and pus-like, and of a rather dirty gray color; the eyelids are slightly inflamed, and the skin around the margins of the nostrils is dry and cracked looking. These discharges may become very profuse, change color a little, that from the nose offensive in smell; that from the eyes so irritating in character as to produce a condition that, unless great care is taken in keeping it clean, will produce an ulcer of the outer coat of the eye that may lead to the complete destruction of that organ. It is extremely likely that, within a few days of the marked onset, a diarrhœa will be shown in which, almost at once, or later, the color will become dark green, the odor extremely offensive, and the discharges frequent in number. In an attack of this kind, which may last for three or four weeks, the appetite may remain fairly good or be lost entirely, and vomiting may or may not be present; the breathing may or may not be markedly increased in number, this depends upon how deeply the lining membrane of the breathing tract becomes implicated; there may be no cough or one of more or less importance, with gagging. During all of the time the temperature will be high, but is not evenly maintained; it may at times run up to one hundred and seven and at others go as low as one hundred and three; there are days when the animal will seem bright and nearly well, while perhaps on the next day he will seem to be as sick as ever.

Treatment. — All cases of distemper must have the best nursing possible and, to arrive at the best results, be kept in a bright, sunny room, well ventilated, which is maintained at an even temperature of about sixty-five, day and night. At the beginning it will be far safer and better to put on a "chest protector." This may be made of one thickness of "outing" flannel, cut so as to cover the breast and sides, as far back as the ribs extend; two holes may be cut at the right place, through which the front legs are to be put; the whole "protector" is then to be lined with an even layer of cotton wool, put onto the body, the edges being carried up over the back, pulled so that it will fit closely, and then sewn strongly together in front of the chest and along the back. The universal use of this "protector," in all cases of distemper, even if there seems to be no especial need of it at the early time when it is applied, will defend the body surface from temporary and unavoidable draught of air and so very much lessen liability to lung complications and encourage recovery. The food should be of a good, nourishing, easily digestible kind, and, if the appetite is good, be fed in prescribed quantities three times daily; as, for a medium sized dog, a tumblerful of milk, containing a tablespoonful of lime water, with a teacupful of oatmeal, or crumbled stale wheat bread, or well boiled rice, in the morning; at noon a moderate sized tablespoonful of *fresh, finely chopped* raw beef, free from all fat, may be given; while the supper will be a tumblerful of *strong* beef broth, with bread or rice. If there is no appetite the diet must be approximated to the above so far as possible. The milk and lime-water had better be fed in one-ounce doses each two hours, alternated with the same quantity of strong beef broth. Two teaspoonfuls of the chopped raw beef may be given, and will generally be eaten, instead of one of the doses of the broth. Raw egg may be fed in doses of one ounce at a time; certain dogs will like this and, if so, it does them good; in other animals the egg will be thrown up and, if insisted upon, cause violent vomiting. If egg is given and the first dose is not retained, do not try it again for several days at least. If the above prescribed quantities produce vomiting in any case, they must be made smaller in quantity, but given at the same intervals of time. If then vomiting persists, everything but the milk and lime water, which may be warmed a *little,* had best be stopped. If the vomiting is then persistent a teaspoonful of iced lemon juice will often "settle" the stomach. Allow but little water at a time, three or four swallows; it may be given half way between the meals; and if the animal is vomiting give him a *little* very cold ice-water at a time.

Keep the nose and eyes as clean as possible by washing them carefully as often as necessary with a solution of lysol, fifty drops, to eight ounces of water, or, if this is not obtainable, with blood-warm water with a little milk in it; the oustide and end of the nose will be more comfortable if a *small* quantity of vaseline is rubbed over them occasionally. After cleansing out the eyes put in a drop or two of a solution of argysol, twenty-four grains to one ounce of water, each time; it will help very considerably in preventing the formation of the dreaded ulcer.

From the beginning use the following powder: Calomel, four grains. Sub-nitrate of bismuth, seventy-two grains. Phenacetine, forty-eight grains. Mix, rub well together, and divide into twenty-four powders. Give one of the powders each two hours, for as long, not exceeding two days, as seems necessary; after that they may be given each three or four hours; or no oftener than seems necessary. This will help to control the bowels, lessen the fever, and settle the stomach.

The further complications are:

1. Ulcers of the outer covering of the eye which penetrate and attack some of the inner structures.

Treatment. — Call a veterinarian or an occulist.

2. **Pneumonia.** — The onset of this may be recognized by a considerable increase of the internal temperature, increased and

labored breathing, with more or less puffing of the cheeks and a dull, weak cough.

The Treatment will be that given for bronchial pneumonia.

3. **Nervous Complications.** — In animals that have been previously severely weakened, distemper occasionally begins with great dulness and depression, which gradually progresses into more or less complete unconsciousness. When these symptoms depend upon the distemper poison, the temperature will be raised, as described, in the earlier part of the attack at any rate.

Treatment will be to thoroughly move the bowels as quickly as possible. Give two compound cathartic pills, as used for men and to be had of any druggist; if diarrhœa be already present do not use but one of the pills.

3a. In this form, it rarely happens that a strong dog, not before having shown noticeable symptoms of distemper, will exhibit great nervous excitement, as restlessness, yelping, and even attacks of fury, which after a little time will be succeeded by the symptoms of depression and unconsciousness described above. In these instances there is, at first, a considerable presence of blood in the brain, which is sooner or later followed by continued pressure with more or less insensibility.

Treatment. — If seen in the first stages, cool the head by the constant application to it of ice-water, if it be possible to do so. In the second stages use the compound cathartic pills, as advised. It is oftentimes very difficult to move the bowels of these animals, and if, within twelve or fifteen hours after the pills have been given, the desired result is not obtained, use hot, strong, soapy water injections of one-half pint of the fluid, each two hours, so long as necessary.

3b. After distemper has been running its more ordinary course for a longer or shorter time, twitchings of the muscles at various parts of the body may begin to be shown. Commonly, the parts thus first affected are either the muscles of the forehead and around the eyes, or those of the legs, generally the hind ones. When the twitching affects the described muscles of the head, the sign is a bad one, the case either dying within a few days, or gradually passing into one of more or less general paralysis. When the convulsive twitchings attack the legs, one or more, the brain is not so directly implicated and the case may even recover, rarely, although more commonly, while the dog may not die, the twitching continues throughout life, in spite of all that is done to cure it.

3c. In other instances, while the animal has seemed to be doing well, he is suddenly seized with a fit; he barks, yelps, perhaps champs his jaws and froths a little at the mouth, draws his head and neck backward and to one side, falls, becomes unconscious, is seized with spasms of the muscles of the greater part of the body, and, as showing the coming tendency toward paralysis, the manure and urine are sometimes passed involuntarily. In from one-half to one minute consciousness may begin to return, the dog gets onto his feet, but shows great weakness, or the seizure may pass directly into a long-continued unconsciousness. If the animal lives so long, paralysis is likely to follow; it may be confined to a certain group of muscles, especially those of the hind limbs or, at times, the whole body becomes paralyzed. Recovery from this condition has, rarely, been known to take place, but as a rule, unless the dog dies from extreme weakness, he lingers along with no permanent improvement of the paralysis until he has to be chloroformed as an incurable case.

Treatment of the last two described complications is very apt to be unsatisfactory. When the twitching commences use full doses of the bromide of potassium (see table); if whining and yelping are persisted in give tincture of opium in ten-drop doses, in a teaspoonful of sweet oil, each two, three, or four hours, but use no more than is absolutely necessary to overcome the symptom which the drug is given to relieve. Paralysis should be treated by such stimulants as coffee, brandy, strong beef tea with wine; with a diet of finely chopped raw beef in moderate quantities at a time, three times daily, if it is eaten with good or even fair appetite and comfortably well digested.

Fourth. — It rarely happens that, after the first symptoms are shown, the effects of the whole poison seem to take place upon the skin on the inner surface of the thighs and on the abdomen. This "breaking out" is first shown by the appearance of minute red spots which, after about twenty-four hours, develop into small nodules surrounded by a bright red ring. These nodules change gradually into small blisters and pustules which vary in size up to that of a pea, which either open and leave a sore which discharges for a time, or else dry up leaving a yellowish brown scab. Healing takes place, after about eight days, leaving a collection of bright pale red spots which continue for some little time.

At other times the eruption may be spread over the entire body, in which cases it resembles an attack of dry eczema; with this there is a bad smelling odor from the body and there will be a considerable temporary loss of hair.

This has been called the abortive form of distemper and is the least fatal of any. There is but very little itching, and the temperature drops to the normal point when the eruption appears.

Treatment is very simple; moist sore places may be dressed with any good drying powder, as one part of the oxide of zinc to ten parts of finely sifted wheat flour; or, if obtainable, the compound alum powder of the drug stores. If a very little glycerine is put upon the scabs it will hasten their natural removal. The food should be that already recommended.

Texan Cattle Fever.

This disorder, which was formerly very troublesome and fatal, at certain times in the year, to Northern cattle, which had mingled with those coming from our Southern States, or were put into cars, stock yards, or pastures recently occupied by them, has now become almost a thing of the past, owing to the well-directed efforts of the Department of Agriculture, at Washington, to prevent such mingling.

It is communicated to Northern cattle by a tick which, living upon the Southern animal, is, by cohabitation or otherwise, transferred to the Northerner, through the skin of which he inoculates the peculiar poison.

Cattle born and raised in the South are not affected by the poison which, although apparently constantly present in their blood, does not seem to exert, as a rule, any markedly bad effect upon them.

Formerly, all of the cattle taken from the North into the "tick belt" died, with very few exceptions. It has now been found that such animals can be taken South and remain unaffected, if certain very simple measures are taken and the Northern animals are not allowed to mingle with the natives.

If an animal is to be taken South, it receives a thorough coat of any good greasy "slush," as for instance that used by railroads, over the entire body; upon arrival at its destination it is driven into a well-fenced pasture, where no natives are kept and which is free from low bushes or trees with low branches. If she is to be put into a barn or cow-shed, the building must be new or one that has not previously been occupied by Southern cattle; it need not necessarily be more than a simple shed, but should be set up on low posts. The first coating of slush may be allowed to wear off when, if the above directions are fully carried out, it only will be necessary in future to slush them up to the knees and hocks occasionally, which will be sufficient to prevent the ticks being able to gain any lodgment on the animal. Cattle treated in this way do not become immune, and, therefore, must not be allowed to mix with the native animals at any time.

Rinderpest—Foot and Mouth Disease. Contagious Pleuro Pneumonia of Cattle.

These disorders, while belonging to the class of maladies now being discussed, need receive no special descriptions, as those of them that have at any previous time been present in the United States have been thoroughly stamped out, and measures are maintained, under the supervision of the general government, which will make their re-invasion of this country extremely improbable.

Bleeding — Hemorrhage.

Hemorrhage is said to take place when, from disease or accident, the blood escapes from the vessels in which it is naturally contained, and the fluid lost contains all of the component parts of the blood.

When bleeding occurs from a wound its *treatment* is entirely within the province of surgery and must be directed toward stopping its flow as soon as possible. The usual methods pursued are tight bandaging of the parts, if the wound is where this can be done. The bandages should be made of firm cotton cloth, varying in width from one inch in small dogs to three inches for horses or cattle, and of varying lengths; for all cases in horses or cattle they should not be less than six feet long, and in some instances much longer; they should be comparatively long in all cases because, through their use, an attempt is being made to stop the flow of blood by applying pressure to the open vessels, and the longer the bandage, within reason, the greater is the possible pressure. If the bandage is made too tight and the parts between it and the heart become much swollen, or the parts between the point of pressure and away from the heart become swollen or cold, the bandage must be loosened just enough to correct these conditions, but no more. If, after applying the bandage, all goes on well, it will be better not to disturb it for twenty-four or thirty-six hours, when it may carefully be removed without danger of setting up the bleeding again. The wound should then be carefully cleaned with one or other of the lysol, carbolic acid, or corrosive sublimate solutions already recommended; and re-covered with a clean, shorter bandage, once or twice daily, until healed over.

If the wound is in a part that cannot be bandaged the hole can be plugged with cotton or oakum which has been saturated with the tincture of the chloride of iron, and must be held in place by stitching the skin over it, or in any other way that may be possible under the existing circumstances, for as long as from twenty-four to thirty-six hours, when the plug should be removed and the wound dressed as directed.

Of course there are many instances of shallow or slight wounds from which, if the animal is kept still, the blood will cease to flow of its own accord after a little time; or may be helped to do so by the use of a few stitches taken in the skin. If the wound is a large one, even if the bleeding has been stopped, a veterinarian had better be called in, if possible.

Spontaneous Bleeding, as it is called, is that in which internal hemorrhages take place; and these occur variously, as from the nose or mouth, when they are generally not of great importance; or into the stomach, when the blood escapes through the mouth; the lungs, when the show is made through the nostrils and is accompanied by more or less coughing; from the rectum, as in the case of bleeding piles; from some part of the urinary apparatus, when it escapes through the natural passages of the urine; and from the uterus or vagina. Besides these, bleeding may take place into the bowels, the cavities of the chest or abdomen, or into a solid gland, as the liver or spleen: all of which happenings will require the services of the skilled veterinarian or physician; as will an outpour of blood into the brain of animals (apoplexy), the symptoms of which are sudden loss of consciousness with more or less paralysis. As this last condition arises, if not in connection with a blow upon the head, because of some unappreciated organic disease of the walls of the blood-vessels of the brain, its permanent cure is not to be hoped for.

The symptoms of important hemorrhages, whether the blood is lost externally or internally, are: paleness of the visible membranes, as in the mouth, coolness or coldness of the extremities, as the legs or ears; and increased frequency of the pulse with a low internal temperature of the body.

General Inflammation — Fever.

Every part of the bodies of all animals may be considered as liable to inflammation; and many deaths are caused by its effects upon various vital organs or upon the bodily system as a whole. Therefore a knowledge of its general behavior, causes, relations and effects, may be regarded as furnishing valuable aid to the better understanding of many attacks of sickness to which animals are subject.

Although certain inflammations are destructive, others, on the contrary, aid in saving the life, and returning diseased parts of the body to health. By its aid many of the blood poisons are gradually expelled from the system; wounds are healed; and broken bones become firmly knitted together. Again, a portion of the skin and structures immediately beneath it as in the case of an abscess, inflames, degenerates and dies, yet, by the continuance of the inflammatory process, the dead parts are cast off and the reproduction of healthy tissue takes place. Therefore it is seen that the process is sometimes destructive, at others constructive.

Causes. — It not unfrequently happens, in the animals, that the symptoms of inflammation seem to us to begin suddenly, unexpectedly, without any previous warning, that has been noticed, and from unknown and oftentimes unascertainable causes. In other instances it will be found to have been produced by some mechanical or chemical irritant; by the action of cold, wet, extreme heat, or by some animal or vegetable poison, the germ of which has been received into or generated within, the system of the animal.

Inflammation is said to be *acute* when it runs its course rapidly, and is attended with severe constitutional disturbance; *sub-acute* when the symptoms although all of them are present, are less well marked and rapid; and *chronic* when they exist for a considerable time, but in a much less well marked form. Its presence in any organ or tissue so far deranges the action of the parts as to produce partial or absolute stoppage of their normal function.

Symptoms. — For a long time it has, in a general way, been considered that the external marks of an inflammatory process consist in the exhibition of pain, swelling, heat and redness, and, in a general way this may be considered as representing what takes place when internal parts of the body are similarly affected. As soon as the inflammatory action reaches a certain degree of intenseness, which, it should be remembered, it does not do, in some slight local instances, the nervous and circulating systems become affected; in which cases the general disturbance that follows is described as being sympathetic fever; or constitutional disturbance. This fever is shown by depression, slight chills, cool or cold extremities, rise of the internal temperature, increased frequency of the pulse, thirst, and loss of appetite. Sometimes the slight chills amount to absolute, continued, shiverings and it is generally thought to be true that the onset of a fever due to internal causes is more likely to show hard shivering than that which is caused by external injury. The intensity of the inflammation will depend upon the nature of the part affected, the extent to which it is affected, and the, so called, constitution of the ailing animal.

General fever may not go so far as to become located, before recovery takes place, in which instances the animal is said to have had a fever; it not being possible to give it a distinctive name because it had gained no perceptible lodgment at any one part of the body, before its affects passed off.

Treatment. — In the treatment of all fevers there are certain general underlying principles that should always be followed, with such modifications as may seem necessary in the individual cases, as they arise from time to time.

To begin with, the *cause* of the fever, should, if possible, be found and removed. Attempts may then be made to return the parts to their original condition, as is quite possible in many instances; or, this failing, to get the next best possible result obtainable, under the circumstances. Formerly, these ends were rather indiscriminately sought by under-feeding, bleeding, purging and blistering. But more recently the conviction has properly grown that an attack of fever or inflammation is not to be put out like a fire, by taking away or withholding fuel, but rather, that no return to health can be achieved excepting through nature's own power to heal; that she has her own ways of curing the various ills, which she will be the better able to accomplish if the patient can be put into healthy surroundings and kept as strong as possible, so that the vital forces. through the exertion of which the cure comes, will be the better able to keep up the work. Under these circumstances it becomes the duty of the practitioner to understand the processes of nature's dealing, and to give material help, by the use of such medicines and measures as will aid the particular process in a perfectly natural way.

Place the animal where he will have good air, without draught, and an even temperature of from 50° to 60° F.; the diet should be varied as much as possible, fed in rather small quantities at a time, but at somewhat nearer intervals; all food that is not eaten within a reasonably short time should at once be taken away so that the animal will not have it constantly before him, as this oftentimes tends to make a poor appetite poorer. Cold water is to be freely allowed, but so long as the fever-thirst is present it should be given at intervals of from fifteen to thirty minutes, not more than five or six swallows at a time. If the fever and thirst are marked, one ounce of powdered nitrate of potash may be given, each day, dissolved in the drinking water, and taken at intervals as directed for the water. If the bowels do not move freely an apparient may be given as one pint of raw linseed oil with a heaping tablespoonful of saleratus, all mixed together and given at one dose to horses and cattle; six ounces and a teaspoonful of saleratus to sheep; and one-half ounce each of castor and sweet oil mixed together for a medium-sized dog.

If the pulse becomes soft, or at all small, milk and raw egg, if the animal will eat it, as he often will, will often give great aid; while, directly there are indications of general weakness, or exhaustion alcoholic stimulants should be given, as for horses and cattle two ounces each two, three or four hours as seems called for, in one pint of cold water or milk; sheep one-half ounce, given in the same way; dogs will do better with sherry wine, from a teaspoonful to a tablespoonful, in a little water; or, if the prostration is extreme, one-quarter to one teaspoonful of French brandy, in four times as much milk, at the same intervals.

If, in horses, cattle, or sheep, the increased amount of urine passed shows an endeavor to set things right by working the kidneys; sweet spirits of niter with or without a small dose of wine of colchicium mixed with it and given three times a day for two or three days, will often give good help. (See dose table.) Sweet spirits of niter may also be given to dogs with good results, but the colchicium had better not be used, unless under the direction of a veterinarian.

When much sweating or diarrhœa occurs, it shows that an effort is being made to get rid of certain waste materials in a natural way, therefore care must be taken not to check them suddenly or unnecessarily.

When inflammations are treated upon this general plan the character of the measures will seem somewhat tame, but there is the satisfaction of knowing that while, without doubt, we can guide to a successful termination certain disorders, that, without intelligent aid, would have terminated fatally, and, in doing so, have been able to add considerably to the comfort of the ailing animal, any rude attempt at cure will merely increase the danger. The risk of all inflammations being in proportion to the weakness of the animal, it is surely not wise to undertake measures that will produce debility.

Diseases of the Breathing Apparatus — Catarrhal Fever.

This consists of an acute or sub-acute inflammation of the membrane lining the nostrils, and upper air passages; it may become complicated with sore throat or bronchitis.

Causes. — It does not always arise from "taking cold," as is often supposed, but also from a too sudden change of air, from exposure to wet, bad ventilation, damp buildings, as in new brick structures before the walls have become dry; and is commonly seen among horses that are brought from country to city stables, or in animals that may have inhaled considerable dust.

General Symptoms. — There is more or less fever, thirst, loss of appetite, frequent quick pulse, slight elevation of temperature, with, perhaps, a little increase in breathing; and a discharge from the nose. *In the horse*, in addition to these, there will be sneezing, blowing from the nose, redness and, *at first*, dryness of the membrane lining the nostrils, which, however, is soon followed by a discharge from them of a thin colorless and more or less irritating secretion, which soon becomes thicker, cloudy, pus-like and profuse. At the end of some two days the feverish symptoms begin to subside and, if the discharge is comparatively free from pus, return to health takes place within ten to fourteen days. Or else, by extension downward of the inflammation of the nasal membrane, there may be sore throat, bronchitis, or even lobular pneumonia.

In cattle catarrh is of comparatively rare occurrence, and its symptoms in them will be confined to those of a general nature.

In sheep the fever is more apt to be of an acute type, with comparatively rapid breathing, sneezing, coughing and shaking of the head. The nose is extended, and there is a greater tendency toward sore throat, bronchitis, or pneumonia. The discharge from the nostrils is more yellow and heavier; and the disorder is apt to run a longer course, perhaps continuing for several weeks.

In dogs catarrh is far from infrequent; and may easily be mistaken for distemper, at first. In addition to the general symptoms there is a nasal discharge, which is either colorless or thick and grayish, considerable sneezing, with wheezing and bubbling as he breathes.

Treatment. — In horses, cattle, and dogs follow that given for simple inflammation, keeping the nose, and eyes if necessary, as well cleaned as possible, with the lysol solution. (See prescriptions.)

In sheep, besides the usual treatment, it will generally be better to give a stimulant or tonic as: one teaspoonful of sweet spirits of niter, in a tablespoonful of cold water, three times daily. Or the following tonic: Tincture of iron, two drams, tincture of ginger-root and tincture of gentian root, one-half ounce each, water, one pint; mix and give two tablespoonfuls three times daily; or, if more convenient, all three doses may be given together, at night.

In chronic nasal discharges the services of a veterinarian should be obtained, as the condition may be due to so many different causes; as diseased teeth, bones of the head, structures in the throat, etc.; the treatment of which must be surgical.

Sore Throat.

Causes. — Inflammation of the structures composing and surrounding the upper extremity of the windpipe (larynx), occurs quite commonly in all the animals as a result of precisely the same conditions, already described as being those of catarrhal fever.

General Symptoms. — There will be loss of appetite, great thirst, attended, if the inflammation is extended to the top of the gullet (pharynx), as often happens, with difficulty in swallowing either liquids or solids. The head is held more or less stiffly, with the nose extended, and there is tenderness upon pressure over the larynx; first a hard, dry, spasmodic cough; reddened membranes; and more or less fever as shown by a frequent pulse, quickened breathing and increased temperature. As the disease goes on the animal does not cough so often, the cough is more moist, and there is a considerable quantity of ropy, sticky discharge, mixed with saliva, in the back part of the mouth, with or without a slight discharge from the nostrils. Or, more rarely, following these symptoms, such a rapid and extensive effusion takes place into the substance of and about the larynx as to seriously and rapidly threaten the life of the animal from suffocation. The breathing becomes suddenly much more difficult, the inspirations particularly prolonged and attended with a peculiar harsh or whistling sound, followed by a short expiration. The nose is very much extended, the eyeballs somewhat bulged outward, with tears running freely from the eyes. The expression of the face becomes anxious, the nostrils, dilated as much as possible, show a red membrane, and there is a frequent hoarse, rasping cough. The extremities are cold, the bodies of horses are covered by patchy sweatings. The pulse is much increased in number and feels wiry to the touch, the temperature rises to from 103 to 106. If this condition continues for more than a short time stupor is shown, followed if relief is not given, shortly, by death from suffocation.

The disorder is more frequently seen in horses and dogs than in cattle and sheep, still it affects them all, at times, and the symptoms do not vary materially between one and the other.

In, by far, the great number of cases, after a few days of considerable annoyance, chiefly from coughing and difficulty in breathing, the animal will gradually regain his former condition.

Treatment. — All directions for the general care of fevered animals having been carried out, the desirability of giving medicines excepting those that will be taken with the food or water, becomes a question of moment. If there is very much soreness or, especially, if the power of swallowing is interfered with, there is no doubt that trying to force anything in the way of a drench or pill down the throat is liable to produce a condition bordering upon strangulation, and so the attempt will be better not made. In instances when the irritation of the throat is not extreme medicines may be given, with advantage, in the form of an "electuary," that is made into the consistency of soft gum, and then pressed into the outer side of one of the back teeth, from whence it will gradually dissolve and be swallowed, as: solid extract of belladonna and powdered camphor of each one ounce; rub these well together and add a sufficient quantity of honey to make the desired consistency. The mass is then to be divided into eight equal parts, of which one may be used each morning and night, in the way above described. Another very useful prescription is to place one teaspoonful of the fluid extract of belladonna upon the tongue, pretty well back in the mouth, three times a day: this small amount will not be large enough to be "spit out" by the animal, or to cause coughing, and the soothing effect of the belladonna will, at times, be very beneficial. This may be given to horses or cattle in the above doses.

In sheep the extreme tenderness of the throat is not so likely to occur, and for them the following prescription has been recommended: chlorate of potash, one-half ounce; tincture of iron, six drams; water eight ounces; all to be mixed and well shaken, until the potash is dissolved. Dose of the mixture for an adult sheep one tablespoonful; for lambs, one-half, and for yearlings one teaspoonful, three times a day.

Outside applications are always safe and generally very helpful. Inhalations of steam are to be freely used, always being careful not to confine the nose too closely, and not to commence the application so suddenly as to increase the cough. If pressure can be made over the larynx without increasing the distress in breathing, hot applications, as poultices of oil-meal, or perhaps better, under the circumstances, common cotton waste, wrung out of hot water, should be applied over the throat and held in place either by a long bandage or a hood made for the purpose, as has been already described; these hot applications should be changed often enough to keep the parts soothed and warm. When the inflammation has somewhat subsided, or sooner, if the poultices cannot be kept in place; or at once, if there is any loss of power to swallow, a smart but not excessive blister should be rubbed onto the skin overlying the larynx; and extending upward, on each side, gradually coming to a point at within two or three inches of the base of the ears. The poultices may be used on all of the animals, excepting sheep, and the blister on both horses and cattle, when required. The blister should be made of one ounce of powdered Spanish fly, to four ounces of lard; well mixed together and allowed to harden a little after mixing, when it may be rubbed on, as directed. Rub lightly when a slight blistering action is required, and harder, with more of the ointment, if a considerable action seems necessary. In all animals, in sheep particularly, a good stimulating liniment may be used instead of the blister, as soap liniment, five ounces; water of ammonia, turpentine and oil of origanum, two drams of each; all to be mixed and well shaken up together. A little of the liniment may be rubbed onto the parts once daily, until an irritation and thickening of the skin begins to be shown; when its further use should be discontinued. When suffocation is threatened, the windpipe must be opened below the throat, and a breathing-tube inserted. This operation will require the services of a surgeon, but if it can be done quickly enough the life will be saved.

Roaring.

This term is used to describe a peculiar noise made by some horses during action.

Causes. — It may be *caused* by a previous attack of sore throat, or a great many other things the descriptions of which are not given, as their existence can only be determined by a veterinarian.

Treatment. — If recovery cannot be obtained by the application of a sharp fly blister, applied as directed for sore throat, with three or four weeks of absolute rest, following it, there only remains a remote possibility that it may be cured by surgical operation.

Bronchitis.

This affects all of the animals, and consists in an inflammation of the lining membrane of the breathing tubes, and sometimes of the air sacks of the lungs as well; and, taken all in all, is one of the most common diseases of the lungs. It may be *acute* or *chronic,* one or both lungs may be affected throughout, or it may be confined to a portion of one or both.

Causes are divided into predisposing and exciting. The *predisposing* causes are debility from any pre-existing disease, but particularly influenza, catarrhal fever, etc. The *exciting* causes are exposure to cold and damp, exhaustion as from overwork or insufficient food, inhalations of smoke or other noxious vapors, the accidental introduction of foreign bodies, as medicines and other fluids or solids, into the windpipe; and as a result of breathing impure air coming from unsanitary surroundings.

Acute Bronchitis is a dangerous disorder, partly owing to the fact that, by it, a sufficient amount of air to properly clear the blood is not admitted into the lungs; and, in some measure, to the fact that the inflammation is not unapt to be spread to the very small tubes, and from them to the lining of the air sacks themselves, so producing a low and dangerous form of pneumonia.

Symptoms. — An attack often commences with the general symptoms of a slight inflammation. Following or accompanying these, catarrhal indications will be presented in addition to which there is a frequent harsh, loud cough which becomes softer and more moist as the disorder advances, and fluid commences to be discharged into the tubes, the animal becomes more depressed or even, perhaps, semi-conscious, if too much air has been shut off from the lungs; the pulse is increased in number to, in horses and cattle, seventy or eighty beats in the minute; in sheep and dogs, one hundred to one hundred and twenty; the respirations are much hurried, being sometimes equal to, and rarely exceeding, the number of the pulse beats; as a rule, the quicker the breathing the more trouble there is in the smaller tubes and the greater the danger. The temperature will be raised to from one hundred and two to one hundred and four, rarely to one hundred and six; the visible membranes are either deep red or, in cases where the lungs are getting too little air, they will show a bluish-red (livid) color. The bowels are rather constipated and their discharges are commonly covered with slime (mucus). The urine is high-colored and scanty.

The two points of danger are *first,* where the tubes going to considerable portions of the lung become so blocked with the discharges that no air can pass them, the lung beyond becomes useless; this condition is shown by much faster breathing without any corresponding rise in the temperature. The *second* element of peril occurs if the very small tubes get so intensely inflamed as to become filled with pus; this is accompanied by greatly increased frequency in breathing, increased, frequent, and distressing cough, with great rapidity of the pulse. These two conditions are more apt to be shown by young animals: horses under four years, cattle under three, sheep and dogs under one; that is, in lambs and puppies.

In favorable cases recovery begins between the fourth and eighth days, and shortly either entirely subsides, or, in old animals, passes into the chronic form.

In unfavorable cases the strength becomes greatly reduced, signs of congestion of the lungs and partial suffocation are shown, and death soon follows.

Treatment should be that recommended for general fever, with the addition of a dry woolen covering to the chest, which in horses and cattle may be easily made by folding an ordinary square horse blanket so that it will be three thick, placing the middle of it under the chest, bringing the ends up over the middle of the back, fastening them there firmly with large safety pins, or otherwise, and throwing one more blanket over the animal in the usual way. Sheep do not need the covering over the chest, unless they have been recently clipped. Dogs should have the jacket already described. The legs of horses should also be covered with ordinary flannel bandages, which should be removed once a day, the legs rubbed a little, and the bandages immediately replaced.

If the cough is hard or the breathing very rapid, inhalations of steam, as advised for sore throat, had best be used. If the constipation is considerable, the bowels had better be moved by warm soapy water injections; if these are not sufficient, a moderate dose of raw linseed oil, as one pint for horses and cattle, six ounces for sheep, and one half ounce each of castor and sweet oil for dogs, may be given; although it is not usually desirable to give a cathartic or even an aperient in these cases, it seems necessary to do so in a very few instances. The cases in which the breathing becomes especially quickened had best have the camphorated oil of the drug shops, or the stimulating liniment already recommended, well rubbed onto the skin over the ribs. In instances wherein depression is great and the pulse weak, the mixture of sweet spirits of niter and quinine had best be given, each two hours, until a fair amount of strength, as shown by the improved character of the pulse, has been regained. In dogs a teaspoonful or two of French brandy in sufficient water may take the place of the niter, as directed for the larger animals.

When cough remains troublesome after the fever is over, fluid extract of belladonna in doses of a teaspoonful may be given on the tongue, three times daily, for horses and cattle. For dogs the following mixture will be better: Syrup of squills and syrup of cherries, of each two ounces; compound spirits of ether, one dram; all to be mixed and well shaken together. Of this, one teaspoonful may be given three times daily, or, if the cough is very troublesome, a fourth teaspoonful can be given at night. If, after recovery from the fever, there is much debility, a rather common occurrence, such tonics as iron, quinine, nux-vomica, and gentian should be given. (See prescriptions.)

Chronic Bronchitis.

Causes. — This disorder is met with either as following the acute disorder or as an independent condition, more especially in older animals.

Symptoms. — The disorder is characterized by a persistent, hard, loud cough, but without any evidences of fever. The breathing is always somewhat quickened, and, if the animal is put to work, or even made to take light exercise, as by driving cattle and sheep for any considerable distances, or taking out a dog for exercise, or subjecting any of the animals to causes of excitement, it becomes more or less considerably disturbed and the cough is increased in frequency. In many long-continued instances there is a gradual loss of flesh, diminished appetite, and general debility. When chronic bronchitis appears as an independent affection, it is gradual in its onset, and of a very persistent nature when established.

Treatment. — The diet should be liberal and nutritious, but the feeding should so be arranged that the stomach is not at any time stuffed full, as with great quantities of hay or grass. Rest is not always necessary, although severe exertion should never be allowed, as it not uncommonly happens that an attack of the acute disorder follows a very slight cause. The best results of medical treatment are obtained through the rather prolonged administration of such tonics as nux-vomica, iron, quinine, and arsenic; and for dogs cod liver oil and the Bland's pills (See dose table.)

Heaves or Broken Wind.

This is nothing more or less than a symptom occurring in the course of various diseased conditions, as chronic bronchitis, asthma, and a broken-down condition of the walls of the air cells of the lungs, called "emphysema." The first of these has been described; the next is:

Asthma.

This is essentially a nervous disorder. The peculiarities in breathing by which it is accompanied are given rise to by a spasmodic contraction of the little circular muscular fibers of the bronchial tubes, which is brought about by an over-stimulation of some part of the nervous system; generally, but not always, that which is in connection with the stomach. It affects horses and dogs, more particularly.

Causes. — Many authorities say that an hereditary taint is a factor in the production of asthma; but it must be remembered that, while in a very few cases this may be a known predisposing cause, as it undoubtedly is among humans, that in by far the greater number of animals no influences of this kind can be discovered, because the personal peculiarities of the ancestry of animals is not generally known to their owners. All that can safely be said in this direction is, that the form of chest which is present in by far the greater number of the cases among animals, is one that is unusually round and shallow for the class of animal to which the patient belongs.

A celebrated author while speaking of asthma in horses has written, "I have no hesitation in asserting that the disorder is generally due to improper food, more particularly to bad, musty, or coarse hay, . . . to a superabundant allowance of hay of any kind, with a deficient supply of grain."

To this may be added the habit of working horses too soon after feeding or watering them.

Again, there are horses with slow digestions, having an acid, pasty-smelling breath, more or less hidebound, with an ill-conditioned skin, and other evidences of indigestion, that certainly have a strong predisposition to asthma, upon a very slight application of the causes spoken of. The writer has known horses having the described form of chest to contract the disorder while at poor pasture, without grain, in a dry summer, which have become perfectly well again after a time of careful feeding and proper attention to the evidently bad condition of the digestive organs.

Symptoms. — Asthma is characterized by a sudden attack of spasmodic breathing, which, as in all cases of heaves, consists of a fairly well-performed inspiratory effort followed by a double expiratory movement, in which the belly is first pressed upward, a stop is made, and the effort finished by a slow and more or less difficult contraction of the ribs. At an early period in an attack of asthma, the expiration is at first of a "jerky" character, rather than a full exhibition of the "double breathing" above described; if, however, the attack continues, the effort made in breathing partakes of the same general character as that of the other two conditions named. In asthma the wheezing sound heard at the nostrils is more distinct than in the others, there is more exhaustion after exercise, with less cough, which is less suppressed and weak as in emphysema, and not so moist as that of chronic bronchitis. Oftentimes there is a sudden and unaccountable onset of the difficult breathing; again, the truly spasmodic nature will be shown by its coming on when the mind of the horse only, is excited by something unusual going on in the neighborhood of his stall, his body in the meantime being at rest. Unaccountable appearances, disappearances, and reappearances of the peculiar breathing are also marked features. If the spasm be severe the pulse will be small and frequent, and, if long continued, the surface of the body, which may have been cool at first, becomes sweaty in patches, owing to the exertion of breathing. An attack may last for a few days, or extend over several weeks or months, and then disappear or pass imperceptibly into emphysema, for which there is no cure.

Treatment. — The diet should receive immediate attention, and must be such as is of a nourishing, and so far as possible, laxative nature, without bulk; or the desired laxative condition may be brought about, and perhaps, better be by having doses of carron-oil mixed with the grain feed twice daily. Carron-oil is made by mixing together equal quantities of raw linseed oil and lime water in a bottle, and shaking the mixture until it changes color and becomes so far emulsified that it will not separate; the dose is from four to eight ounces, which should be increased or diminished as occasion requires, the object being to always keep the bowels in a fairly active condition. The drugs from which a selection should be made are: bromide of potash, iodide of potash, belladonna, and lobelia (see dose table), sometimes one and sometimes another will be found to give the best results in the various cases.

In dogs the treatment will be about the same, excepting that sweet oil, or, better, cascara should be used to bring about the desired condition of the bowels.

Emphysema.

This may affect one lung or both, or only a part of each.

Causes.—It consists in the giving way of the walls between a lesser or greater number of the air sacks, as a result of which, more or less of the lung becomes filled with "bladders of air" of various sizes, to such an extent as to prevent the normal amount of the inbreathed air from being expelled, as it should be, before the next fresh air is to be taken into the lungs. This unexpelled air, having already given up its oxygen to the blood, is of no further use and must in some way be gotten rid of, so far as possible, in order that sufficient new air to freshen the blood may have room to enter. Thus it is that the animal makes such a great effort to expel all the old air and in doing so uses all the possible muscles that he can to help; this full use of the "extraordinary muscles of expiration," as they are called, requires the double expiratory effort already described.

Treatment.—The disorder is incurable because of the presence of the organic charges in the lungs; the ruptured walls of the air sacks cannot be mended. As work or exercise demands a greater amount of fresh air for the lungs, with increased exertion to get rid of that which has become useless, an animal having the trouble should not be subjected to exercise, and horses or oxen having it to any great extent should not be worked, and cannot be to any profitable extent.

Congestion of the Lungs.

This term is used to describe a condition in which the lungs become suddenly and fully stuffed with blood. It is most commonly seen in horses, but may occur in the other animals.

Causes. — It is generally met with in badly conditioned, soft, and fleshy animals that have been put to unaccustomed, hard, continuous work, or to great sudden exertion. It may also occur from exhaustion, bad air and drainage in stables.

Symptoms are in most instances of a very severe type, and especially characterized by great difficulty in breathing. The horse or ox stands with his limbs outstretched, and gasps for breath; all the available muscles of respiration are called into play; the nostrils open and close in quick succession; the flanks heave with a corresponding rapidity; the body surface is covered by cold sweats; the extremities are icy cold; the visible membranes are deep red, showing plainly the venous condition of the blood, as well as the slowness with which it flows through the vessels. The pulse at the jaw is very frequent, and may reach, in the horse and ox, one hundred to one hundred and forty beats a minute; it is feeble, indistinct, and becomes almost, if not entirely imperceptible, in severe cases, although the artery is large and seems full; and there is a tremor of the whole body. The action of the heart, which is irregular and tumultuous from the first, becomes still more embarrassed; the lungs still more engorged; and the breathing more disturbed, until at length death results because there is not sufficient arterial blood in circulation.

In more favorable instances, however, the blood begins to slowly leave the lungs, and the heart to regain power until the circulation of blood through the lungs is again fully established, and the animal soon regains his normal condition.

In some cases a little very dark colored blood drops or runs in a small, slow stream from one or both nostrils; this comes from the rupture of some small vessel in the overburdened lung; its presence, of itself, need cause no special alarm. Good hopes of recovery may be entertained so long as the pulse can be fairly well felt and counted. As relapse is apt to take place within a short time, the animal should on no account be exercised or even taken out of his stall for three or four days after he seems well. It not infrequently happens that what seems to be a slight attack of this disorder results in a case of pneumonia.

Treatment. — In all cases and at the very first, it *must* be so arranged that the animal can have a good supply of good fresh air, without draft. If he must be kept in an ordinary stall, he should be turned around so that his head will be kept in the open passage; and he should be tied in that position. If he is in a box stall he should be tied so that it will be impossible for him to get his head into a corner or against the wall and so have a chance of breathing less pure air. The body surface should be well rubbed with straw or coarse cloths and kept warm by blankets. The legs are to be rubbed with stimulating liniments and closely bandaged with woolen flannel; and if they do not grow warmer, after a little time the rubbing and bandaging should be repeated.

The writer once had the pleasure of seeing a very valuable trotting mare recover from a desperate attack of this kind, in which the warming-up treatment consisted in placing all four feet, at one time, into four strong stable buckets which were three-quarters full of hot water with a good quantity of ground mustard in it; under the middle of the body, between the fore and hind legs, was placed a large soaking tub half full of almost boiling water. She was then covered with three good sized "sweating" blankets, which were large enough to reach to the floor, and over all of this was thrown a good sized waterproof covering. The water in both the pails and tub was changed often enough to keep up the desired heat. Of course for soaking the feet and legs the water must not be hotter than a man can bear to hold his hands in, as long as he likes, without pain; for if it is warmer than this, the legs will be scalded and the hair permanently lost.

Internally diffusible stimulants should be used; as whisky or brandy in moderate doses, which should be repeated every one or two hours for as long as may be necessary, the condition of the pulse and distress in breathing, being the guides. In place of the alcohol, and in bad cases, the stimulant ball had better be used, if any one is about who is able to give it properly; it *must not* be allowed to break in the mouth. The ball consist of two drams each of powdered carbonate of ammonia and gentian root, with five grains of red pepper; all to be mixed and made into a ball by the addition of enough molasses to give it the consistency of an ordinary pill; this mass can then be tightly rolled in thin tissue paper and given as directed. It should be repeated every one, two, or three hours, as necessary; in bad cases the second ball should be given in one hour after the first one has been taken. If, after a reasonable trial of this treatment, the circulation does not start up, bleeding may be resorted to, and from three to four quarts of blood may be taken from the jugular vein. The bleeding is not to be repeated; nor is it advisable to apply any stimulating liniment or other irritant to the walls of the chest, as they cannot possibly do any good, but on the contrary may do harm by so irritating the animal as to increase the number of respirations and the distress in breathing.

During the convalescence, and to avoid a second attack or a subsequent pneumonia, the animal should be placed in a quiet place where he can have good air, comfortably clothed, and receive a nutritious diet. Water to drink may be allowed as fully as desired from the first onset of the trouble; indeed the more he will drink the better it will be for him.

Lung Fever or Pneumonia.

It should be understood in the first place that the lungs of animals naturally exist in several large complete divisions of the lung on each side, and that these divisions are called *lobes*. And further, that each of these *lobes* is made up by the collection together of a varying number of *lobules*, which are, however, not complete divisions of the lobe but exist under the general covering of the lobe to which they belong.

Several varieties of this inflammation are described but, for present purposes, only two of them need be mentioned.

First: Ordinary lung fever, called also *acute* or *lobar* pneumonia, and:

Second: Catarrhal, bronchial, or *lobular* pneumonia.

All of the animals are subject to this disorder.

Acute pneumonia is now thought to be a general disease, of which a temporary consolidation of more or less of the substance of one or more of the lobes is the prominent local indication.

Causes. — The usual *exciting* causes are sudden chills, exposure to cold and wet, especially after severe exertion or fatigue, and confinement in draughty stables. The disorder is especially prevalent during spring and autumn, because of the sudden changes in temperature which commonly take place during those seasons. Other causes are: inhalation of irritating gases, as fumes of ammonia, etc., the smoke from burning straw, hay wood or other materials; as well as the presence of foreign bodies in the lungs, as medicines turned down the windpipe, and also from wounds of the chest walls, which penetrate into the cavity containing the lungs; or from a wound inflicted by the sharp end of a broken rib.

More often one lung only is affected although both may become so, when the case is said to be one of double pneumonia.

Symptoms. — In the horse, pneumonia of this type always begins with an attack of severe shivering soon followed by a hot stage, the internal temperature reaching to from one hundred and three to one hundred and six, while the body surface and the extremities are cool or cold to the touch. The pulse is frequent but very variably so, it may be no more than sixty beats in the minute, while at other times it may be as much as one hundred beats in the same interval of time. In character it is at first strong and hard, afterwards becoming soft and weak. Breathing is, at first, hastened no more than in proper proportion to the number of the pulse; afterward, as the lungs, or a portion of them, begin to solidify, the movements are more frequent, reaching, perhaps, to as many as sixty in the minute; the nostrils are dilated and the air coming from them feels warmer than usual, there may or may not be a slight cough; and a little rusty-colored discharge from the nose; the membranes are red with, possibly, a slightly yellowish tinge. The animal usually stands throughout the attack; he will, however, occasionally lie down for a short time, in which case he will lie upon the diseased side. The appetite is seldom entirely lost. The symptoms afforded by listening with the ear pressed closely to the side, or by thumping lightly with the fingers, over the same parts, so valuable to one who thoroughly understands the normal and abnormal sounds and what the variations that he finds mean, are far too intricate for description here.

The disease reaches its height toward the fifth or sixth day.

In Cattle the symptoms will not vary much from those of the horse, excepting that this animal persists in lying down, with the breast bone pressed against the floor.

In Sheep the differences are that the shivering fit is of much shorter duration; the animal stands with the elbow turned outward from the sides, and there is a persistent cough, more apparent distress in breathing, and there is a decided discharge from the nostrils. The appetite is more frequently entirely lost.

In the Dog the differences are: a greater distress for breath; the animal sits up on his haunches with the nose extended and the mouth open. If he lies down at all he will try to arrange matters so that his head will be lifted up and supported in the position described. The heart is apt to show early weakness and therefore should always be carefully and frequently examined. The temperature will be from one hundred and three to one hundred and six.

Treatment. — Is a matter concerning which there is a great variety of opinion and practise, but all agree that there is the greatest need of a good supply of fresh air, without draught. For this reason the animal should be placed, as nearly as possible, under the same conditions, in this respect, as those recommended in congestion of the lungs. The maintenance of an even temperature is *very* desirable, at about sixty-five degrees if possible; at any rate the animal *must* not be placed where the temperature will fall below fifty-five degrees at night. The chest should be covered with a folded blanket, as already described, both in horses and cattle, and the flannel jacket should be put upon dogs, and all three of these animals may have the camphorated oil well rubbed over the chest walls under this covering, once daily during the attack; further than this, the body should be kept comfortably covered and the legs bandaged with woolen flannel. As much cool water should be allowed as is desired, but during the earlier stages when thirst is especially great, the water should be given in a few swallows at a time, each fifteen or twenty minutes, after the thirst is somewhat lessened a moderate supply of water may be left within reach of the animal. The appetite should be carefully nursed and a nutritious diet given as has been described. Whatever the animal will eat, including milk and raw eggs, may be given him freely at any stage of the malady. As to medical treatment there will be, at first, nothing better than that recommended for general fever, with, in cases where the pulse is especially full and frequent at the beginning of the attack, the tincture of aconite root, in doses of from ten to twenty-five drops, mixed with four tablespoonfuls of cold water, should be given each two hours for from six to eight times, as required, to horses and cattle. Remember that it is being given to lessen the tension and frequency of the pulse and that as soon as this object has been gained the dose is to be reduced or stopped entirely, as seems indicated. This nursing, with the administration of the nitrate of potash and the aconite, if it is needed, will generally be all that is required by a straight case of acute pneumonia. If, however, after the fever has subsided, much debility is shown, stimulants should be given: sweet spirits of niter, whiskey or brandy, in doses of from two to six ounces, with a proper quantity of cold water, each two, three, or four hours, as seems necessary, judging the strength as indicated by the pulse. If, after two or three doses of the stimulant have been given, its effect seems to be good, it may be continued as required; if, on the other hand, the breathing becomes, even in the slightest degree, more distressed, the stimulants must be *immediately* discontinued and the case allowed to go on, under the general treatment, with good nursing. The sides should never be blistered, even with mustard, nor should bleeding be allowed. After full convalescence is established, a good tonic may or may not be required; if one is used, it should contain iron as part of its composition. (See prescriptions.) Cattle should have about the same treatment with, if necessary, a fairly good dose of epsom salts, one pound; ground ginger, tablespoonful; molasses, teacupful; all to be mixed with three pints of warm water, and given at one dose when the salts have dissolved and the mixture cool enough.

In Sheep the tendency is strongly to a low type of the disorder- Therefore, if they do not improve under the ordinary rules of treat. ment, they should at once be put upon that recommended for catarrhal pneumonia.

In Dogs there is frequently a tendency toward debility and failure of the heart's action. It will not, therefore, be best to give them aconite except at the very commencement of a case wherein the temperature is high and the heart is working very hard. It should even then be used with caution and stopped as soon as its effects commence to be shown by a slightly lowered temperature and less forceful heart; the dose should always be a moderate one and given in not less than a tablespoonful of cold water. As already indicated, the heart should be carefully watched throughout the attack, and if at any time its action seems to tend toward weakness or irregularity of force in the beats, it must be stimulated by brandy or the administration of digitalis. (See prescription).

Catarrhal, Bronchial, or Lobular Pneumonia.

Is always of a low type, generally secondary to some other debilitating disorder, and always having a strong tendency to cause degeneration of the parts of the lungs affected, which are, as has been said, larger or smaller scattered groups of the lobules

Causes. — Lobular pneumonia is always secondary to obstruction in the bronchial tubes, especially of the very small ones. It may be excited either by the gradual extension of inflammatory processes from the tubes to the air cells, or by the entrance of inflammatory products from the tubes into the cells. Any bronchitis may predispose to it, but it generally follows in such animals as are debilitated from any cause, and is always the form shown when pneumonia follows any of the infective diseases. It may also follow wounds which penetrate the chest walls.

Symptoms. — These are, at first, always more or less obscured by those of the malady which it accompanies, or by which it has been preceded. It rarely runs a regular course, that is, terminating after a *definite period* either in death or recovery, for it may be protracted for weeks.

After bronchitis or any debilitating fever has existed for a variable period and pneumonia sets in, the breathing becomes more or less hastened and labored; the temperature rises gradually to from one hundred and four to one hundred and five; there is very rarely any shivering fit. After twenty-four hours the pulse becomes small, compressible, and feeble. The trouble is somewhat indicated by the fact that, when the symptoms already described are present, the fever usually shows well marked ups and downs, at irregular intervals. The intensity of the symptoms depend upon the amount of lung involved. When recovery occurs, the change toward health is very slow; the pulse rate, temperature, and difficulty in breathing diminish almost imperceptibly and the convalescence is long. When the disease is to end fatally, the temperature rises, the visible membranes are of a bluish deep red color, and the breathing movements hurried and irregular.

Treatment. — The general rule laid down for the nursing and care of the acute disorder will apply here; but it is to be remembered that as this is a secondary malady, the very fact of its presence indicates that the animal is in an enfeebled condition and, therefore, that the administration of *all* depressing agents, such as nitrate of potash, aconite, etc., must be avoided. The chest walls and the body should be carefully covered, as directed, and the legs bandaged. Inhalations of steam made from water, into which a moderate amount of common vinegar has been put, will be very useful if the case is one following bronchitis. The sides should not have any irritant applied to them, not even a stimulating liniment. Stimulants, as sweet spirits of niter, Irish whiskey or brandy, with quinine, should be given from the first, three or four times daily, and persisted in. Quinine given in large doses through the rise of the fever and reduced somewhat during the return to health, is a most serviceable drug in these cases. The quantity and number of doses to be given each day must be governed by the individual case; it may be added to until the pulse is increased in force and the respiration a little less frequent. When this point has been reached, the dose may be held where it is, or reduced little by little, as the pulse, etc., show that it is time to do so.

This treatment will be best for all animals, excepting that the full-fleeced sheep will need no extra covering over the sides. (See dose table.)

Pleurisy.

Inflammation of the membrane completely lining the inner walls of the cavity of the chest and thence extended to form the outer covering of each lobe of both lungs. It may be primary or secondary. It affects all of the animals.

Causes. — *First*, exposure to cold, damp, and sudden changes in the temperature of the air, especially in animals that have been previously run down by overwork or exposed to bad sanitary conditions.

Second, the extension to the pleura, of any inflammatory action which may have been set up in a contacting part. In this way the malady is frequently associated with lung fever, especially in instances where the pneumonia has resulted from any of the infective disorders.

Third, any wound that has penetrated the chest wall; into the tissue itself, or made by a broken rib.

Fourth, it may be set up in connection with such constitutional disorders as rheumatism or pyæmia.

Symptoms. — In the horse. Acute pleurisy begins either with a slight chill or a hard shivering fit and loss of appetite. The animal is restless, and shows signs of pain that may be mistaken for those of colic; breathing is hurried, difficult, sometimes a little gasping; performed by the muscles of the belly, as much as possible, carefully, and is frequently accompanied by a grunt when the animal is moved, especially if he is turned around, as in a box stall; pressure of the muscles between the ribs, by the ends of the fingers, causes much pain and grunting.

The pulse is increased in number, to from sixty to one hundred beats, is hard and often has a wiriness that is caused by nervous irritation, which is directly due to the pain. The temperature rises to from one hundred and three to one hundred and four, the mouth feels hot and dry, but the air coming from the nostrils does not feel so hot as in lung fever. A short and evidently painful cough is often present. A return to health may begin to be made within two or three days, or even a little sooner; or the inflammation may be followed by a considerable outpour of fluid into the cavity of the chest (hydrothorax), which will be shortly described.

In Cattle the differences are that the elbows will be turned out from the ribs, the flanks are hollow, the cud is lost; not infrequently signs of rheumatism are shown, when the heat and swelling caused by it will change from one joint to another at frequent intervals.

EXPLANATION OF (colored) ILLUSTRATION OF (EWE) SHEEP

1. Lower jaw-bone.
2. Tongue.
3. Upper jaw-bone.
4. Cavity of the nostrils.
5. Bones of the nose.
6. Bones of the cranium.
7. Brain (cerebrum and cerebellum).
8. Spinal cord, upper portion.
9. Back of mouth and back opening of the nostrils (pharynx).
10. Windpipe and bronchial tube.

11–11. Gullet (œsophagus).

12. Jugular vein.
13. Carotid artery.
14. Muscles of the neck.
15. Large ligament of the neck, helping to hold up head.
16. The first rib.

17–17. Parts of the backbone.

18–18. Muscles of the back.

19–19. Vena azygos.

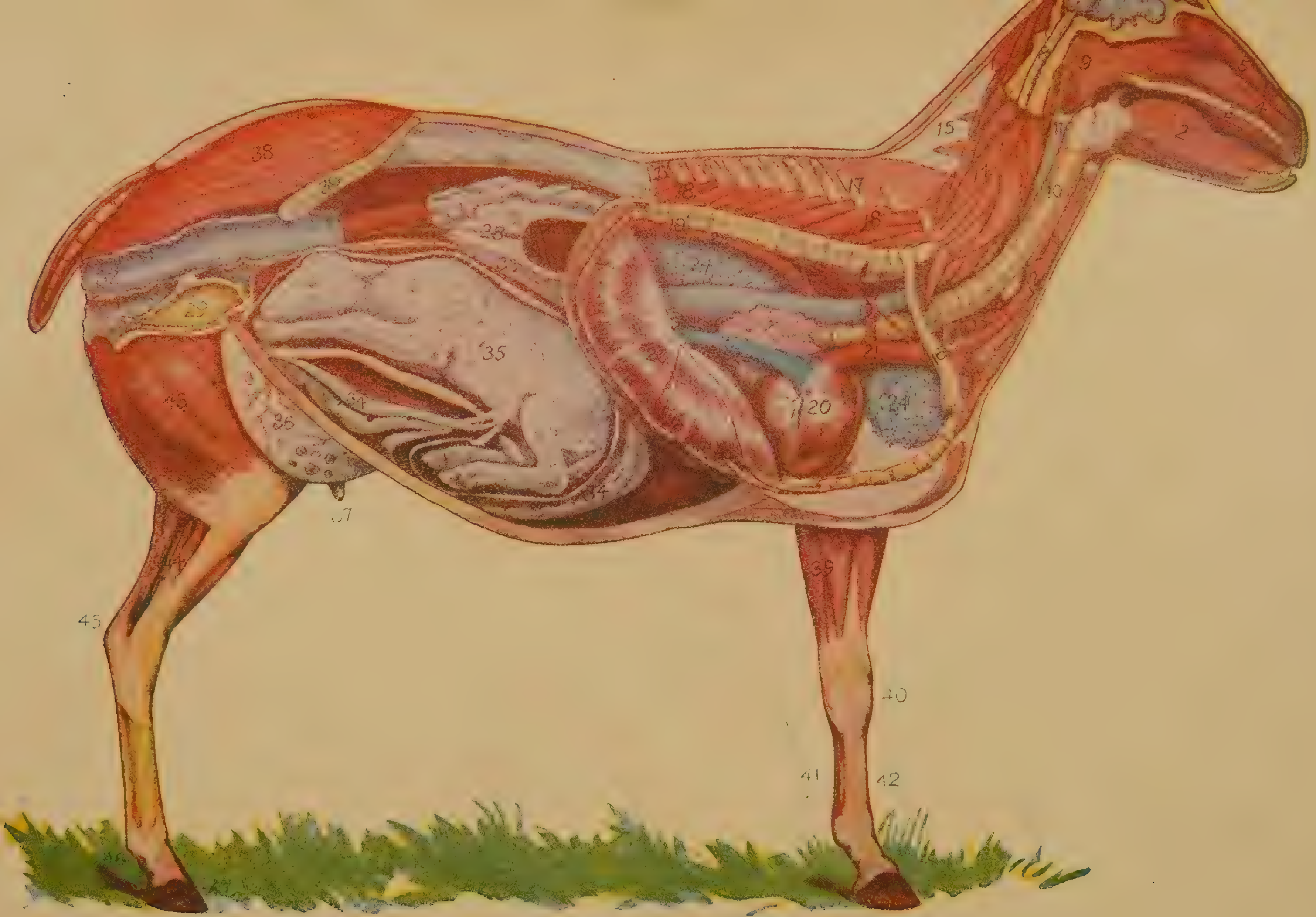
20. Heart.
21. Anterior vena cava.
22. Posterior vena cava.
23. Posterior aorta.

24–24. Left lung.

25. Membrane covering heart (pericardium).
26. Midriff; diaphragm. Divides cavity of chest from that of belly.
27. Kidney.
28. Ureter; tube leading from kidney to bladder.
29. Urinary bladder.
30. Pelvic bones; edgebones.
31. Vagina.
32. Rectum.
33. Bowels.

34–34–34. Walls of uterus.

35. Young lamb in uterus.
36. Udder.
37. Teat.
38. Muscles of back.
39. Muscles of inner forearm.
40. Knee, with skin removed.
41. Back tendons.
42. Shin bone.
43. Inner muscles of leg.
44. Inner muscles of shank.
45. Hock.
46. Pastern.
47. Hoofs.



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(EWE) SHEEP

SHOWING INTERNAL ORGANS

In Sheep there are no marked differences in symptoms, and if the animal is to get well the return to health begins in from two to three days. If, however, convalescence does not begin at about this time, the disorder is very likely to terminate fatally, after a period of from a week to ten days, from dropsy of the chest.

In Dogs the general symptoms will cover all that is shown. This animal is *not* particularly subject to this disorder.

Treatment. — The animal should be placed and covered as directed in pneumonia, and receive, during the severe symptoms of fever, aconite and nitrate of potash, in the same way. In addition to which small doses of tincture of opium or morphine, should be given if the pain is considerable and long continued; it is not best to give any preparation of opium, unless it is absolutely required, because of the tendency of that drug to create constipation; but where the pain is severe it must be stopped, and if that cannot be done by the use of blankets wrung dry out of very hot water and applied to the chest, as already directed for the dry covering, the opium must be used (see dose table); and with it a small dose of raw linseed oil may be given to horses, cattle, and sheep, and sweet oil to dogs, as, one quarter of the full doses of the oils with each dose of tincture of opium. Remember that the opium is given to relieve the pain and a sufficient amount of it, within reason, must be used to accomplish the object, but the doses should not be given at anything less than a two-hour interval.

If after the symptoms of severe fever have passed away, the animal seems to make no further progress toward recovery, the breathing and pulse still somewhat difficult and raised; the sides had better have a good rubbing with stimulating liniment and be immediately covered with a *dry* blanket; and begin to receive medium doses of sweet spirits of niter or whiskey, three or four times daily as required; the mixture of the niter, quinine, and belladonna (see prescriptions) will probably give good results.

Dropsy of the Chest. Hydrothorax.

There is always during health a small quantity of fluid secreted into the cavity of the chest, by the pleural membranes, which keeps the surfaces properly moistened and saves friction between the chest walls and the lungs during the breathing motions. Any inflammation of these membranes, as in pleurisy, dries up this natural secretion, more or less, during the *very first* of the attack. Soon, however, the membranes, excited by the inflammation, pour out a much greater quantity of this lubricating fluid than is required; and the surplus quantity, of course, falls into the bottom of the cavity and accumulates there. A considerable amount of this accumulation may take place without doing material harm, and, as the pleurisy is recovered from, the fluid ceases to be further oversecreted and the quantity which has already been collected is gradually absorbed by natural processes.

In certain instances, however, the secretion is, little by little, or more frequently somewhat suddenly, poured out in such great quantities that the lungs, pressed by it, or floated on top of it, no longer have room in which to expand sufficiently to take in the required amount of air, and dropsy of the chest is shown to be present.

Symptoms.—With the effusion of the fluid the more active febrile symptoms and pains abate, the temperature may fall a little and the pulse be less wiry.

If the fluid now accumulates in very large amount, the pulse becomes much more frequent, is of smaller volume, and may be irregular both in strength and evenness of the beat; the breathing becomes more labored or even very difficult; the flanks heave; there is flapping of the nostrils; the head is protruded; and so great sometimes is the effort to breathe that even the tail moves up and down with each effort. Dropsical swelling appears beneath the skin upon various parts of the body and legs, but, more particularly, just between the forelegs, below the breast, from whence it extends backward, more or less.

Treatment.—The administration of very large doses of iodide of potash for horses and cattle, no less than three drams at a dose, repeated three times a day, and given in drinking water, is highly recommended by some. The writer has had good results by setting up severe purgation by the use of raw linseed oil, one quart, to which has been added three large tablespoonfuls of saleratus; all given at one dose, and repeated, in from one half to three quarters of the first dose, if the object sought for has not been reached within twenty-four hours from the time the first dose was given. Tapping of the chest wall and drawing off the fluid is often resorted to. If this is to be effectual it must be done by a veterinarian and before the difficulty in breathing has become very great.

Soreness of the Muscles between the Ribs—Pleurodynia.

This disorder is spoken of in this place because the general appearances of an animal suffering from it so closely resemble those of pleurisy, as to make it possible to easily mistake one for the other. It affects horses.

Causes.—These are often spoken of as being of a rheumatic nature, it sometimes appears without any apparent cause, at other times it follows when horses that are quite warm from driving have been allowed to stand without being covered.

Symptoms. — Will be those, exactly, of a case of sore pleurisy but accompanied with rather more groaning when the animal is moved or when the muscles between the ribs are pressed by the ends of the fingers. One disease may be separated from the other by the fact that in this one there will be little, if any, rise of temperature, and the character and number of the pulse will be less interfered with.

Treatment. — Rub the sides well, once daily, with stimulating liniment and cover them with a dry, folded blanket, the ends of which have been brought up over the back, as already explained. Give one tablespoonful of saleratus, three times daily, in water. The animal should begin to show improvement within three days, or less, and be well within a week or ten days.

Diseases of the Heart and Blood Vessels.

While this class of disorders are, perhaps, of rare occurrence in animals, as compared with men, they are nevertheless so frequently met with in practise as to merit some mention here; although the methods of detecting them, with any degree of sureness, are so technical that it is impossible to describe them intelligently within the limits of a book of this character.

Disorders of the Organs of Digestion — Diseases of the Tongue.

This organ is exposed to many sources of disease and injury and, as it is abundantly supplied with large blood vessels, it follows that wounds of it are commonly productive of much bleeding; and also, because of the large distribution of nerves, slight injuries of it are especially painful.

Inflammation of the Tongue, Glossitis: Causes. — This disorder is rarely met with in horses, except as the result of mechanical injuries, including the use of irritating medicines, or of certain infective disorders, as described.

In Cattle it is by no means rare and among them is due to the eating of rough, coarse food or that mixed with foreign bodies, as slivers of wood, wire, thorns, etc., or in complication with specific fevers.

In Sheep it may be presented under the same condition as in cattle.

Dogs are very liable to it from taking sharp substances into the mouth, as broken bones, irritating agents of various kinds; self-inflicted bites, received during a fit; or from the stings of insects. The whole or a part only of the organ may be inflamed.

Symptoms. — In addition to the general signs of fever there will be a profuse flow of saliva from the mouth, which is itself very hot. After a little the tongue becomes enlarged, reddened, and in some cases, protruded from the mouth, and hard. If the organ is much swollen, especially the back part of it, in the throat, breathing is interfered with, the animal cannot chew, and swallowing may be difficult or impossible.

Generally in the course of two or three days the symptoms will subside, and after a little time the organ will resume its function. In less favorable cases abscesses may form, or death (mortification) of the whole or a portion of the tongue follow; or the organ may be left somewhat harder and smaller than natural.

At first, before the power of swallowing is interfered with, a good dose of cathartic medicine had best be given; the aloes pill (see prescription) for horses; epsom salts for *cattle* and *sheep;* and castor oil for *dogs.* After this the mouth must be frequently syringed out with borax dissolved in cold water, as much borax as the water will dissolve. Cold water with a teaspoonful of nitrate of potash to the pailful of water should always be kept within reach of the animal, that he may be able to cool his mouth by plunging his nose and face into it. If some of the graver symptoms follow, medical aid had better be sought.

Sores (ulcers) of the Tongue occur in all the animals independently or in complication with other maladies, as certain disorders of the stomach, etc.; also as a result of wounds made by sharp teeth, ropes, bits, and various sharp foreign bodies. They interfere materially with condition because from pain in moving the parts, animals, especially horses, cattle, and sheep, will not eat so much as they should; and oftentimes in horses, the presence of these little sores on either the tongue or cheek will cause the animal to drive unpleasantly on the bit.

Treatment.—If the sores are due to sharpness of either the inside or outside edges of the back teeth, as in horses, the uneven edges should be removed by filing them off with an instrument made for the purpose and easily obtainable. After the cause has been removed, the mouth should be thoroughly syringed out, twice daily, with a saturated solution of borax and water, and every other day the sores should be lightly touched, over their whole surface, with a stick of nitrate of silver. They will heal within a week or ten days.

Parrot Mouth. — In this condition in horses the upper front teeth grow to project to a greater or lesser extent over the under ones, because of an unusual shortness of the lower jaw.

Treatment. — Such animals, if the projection of the upper teeth is considerable, should not be turned out to pasture because they are not able to crop the grass in sufficient quantities to keep them in proper condition. If the lower teeth are so far back, or so long as to wound the soft parts lying just behind the upper ones, when the animal shuts his mouth, they should be filed down often enough to prevent it; the upper teeth should also be cut back whenever they become too long. This operation is best done by putting a gag into the mouth, pressing the animal backward into a stall, and filing off the projecting teeth with the coarse side of a sharp horse-shoer's rasp. The "gag" should consist of a round piece of wood one and one-half inches in diameter and about six inches long, having a strap, with a buckle, which is long enough to go up and over the head just back of the ears, with which it will be held in place; it should be put into the mouth as a bit is and fastened.

Lampas. — This term is used to describe a swollen condition of the soft parts lying just behind the upper extremities of the front teeth in horses.

Treatment. — Carefully, freely scratch the swollen parts with the point of a sharp knife, being sure not to cut in deeply enough to open an artery which lies there; and then rub common salt well into the cuts made. It used to be thought necessary to burn the swollen part out; such an operation should not be allowed, because it is very painful and entirely unnecessary.

Foreign Bodies in the Mouth should always be sought for when, without known reasons, an animal persists in not eating, drools constantly from the mouth, quids his hay, and loses flesh. The accident occurs among all the animals, and the offending object may be found wedged between the teeth, as in dogs, or lodged in some of the soft structures; or the teeth may be very sharp and cutting the tongue or cheeks.

If an Animal Persists in Drooling from the mouth, and no cause for it can be found, the effects of two moderate doses a day of fluid extract of belladonna should be tried for three or four days. (See dose table.)

Pharyngitis.

This term is applied when there exists an inflammation of the upper end of the gullet at the back of the mouth. The malady has already been spoken of in connection with inflammation of the larynx; but it also occurs as an independent disorder.

Causes. — Besides those already spoken of as being due to specific fevers and disorders of the upper air passages, it may be due to cold, exposure, dampness, direct irritation, or by irritation due to a disordered digestion.

Symptoms. — Swallowing is difficult, is sometimes accompanied by coughing, during which the chewed food is forced back into the mouth and through it outward, while the fluids are thrown out through the nostrils. There is no fever or interference with breathing, unless there is also some inflammation of the larynx.

Treatment. — In many cases the condition remedies itself, if the animal is allowed a few days of rest. If the condition continues without alteration for three days, the parts had better be blistered as recommended for sore throat. If fever is present, the entire treatment should be that of laryngitis.

Paralysis of the Muscles of Swallowing.

There is in horses a disorder of the central nervous system, the most pronounced symptom of which is a total inability to swallow either fluids or solids.

Symptoms. — The discharge of chewed food, mixed with saliva, through the nostrils, and when an attempt is made to drink water that fluid will be discharged in the same way, although the animal will appear to be drinking with great relish. The membranes of the eyelids are pale and a little yellowish; the pulse is slow and rather soft; the temperature is at first normal, after a little time ninety-nine, or perhaps a little lower. The face has an anxious expression; the horse stands rather persistently and quietly, although he does lie down at times; he loses flesh rapidly, and, if allowed to live so long, dies of starvation.

Treatment. — As a precaution, the throats of all animals showing these symptoms should be strongly blistered, as directed for sore throat; although if the paralysis is really present the condition is incurable. Against his expressed desire, but at the urgent request of the owner, the writer at one time kept a case of this sort alive for nine weeks, during all of which time the horse did not swallow a particle of food or water. The animal was put into slings and fed by injections of a great variety of fluid foods and stimulants, which were well taken. Electricity was applied to the paralyzed muscles twice daily, and strychnine was given up to the full limit of safety; notwithstanding all of which the horse was, except for the loss of considerable flesh and strength, in precisely the same condition as when treatment was begun; the owner was satisfied that the case was incurable and the animal was chloroformed.

Choking

This accident, rather frequently observed in horses, less so in dogs and sheep, unless the latter are being fed upon roots, is one of very common occurrence in cattle; and in all is attended with considerable danger to life. In connection with supposed choking in dogs there is one fact that should always be remembered: persons are apt to believe that these animals are choked when they are not; if a dog coughs, or indicates any peculiar symptoms about the head and neck, he is oftentimes thought to have a bone in his throat; and inasmuch as rubbing the sides of the throat with the paws, gasping, etc., all of them symptoms of choke, are also seen in connection with rabies, care should be taken, in examining these dogs, that the rather natural but probably fatal mistake is not made.

Causes. — These are either dependent upon the animal itself or on the nature and form of the food. Under the first of these may be mentioned any reflex or direct nervous influence which may cause a spasmodic contraction of the muscles of the gullet upon the object swallowed (this chiefly happens in animals that have been rather recently relieved of a previous choke); previous narrowing of the part, as by the tight strap put around the necks of crib-biting horses; anything which prevents the proper flow of saliva into the mouth; and anything which prevents the food from being properly chewed and mixed with the saliva. Of the second class of causes: those cases in which the object swallowed is sharp-pointed, too large, or too dry. Among these may be included fish-bones, which are very troublesome in puppies; large, irregular-shaped, or sharp-ended bones. In cattle and sheep the most dangerous articles of food are cut roots, potatoes, and apples. Pieces of corn cob, when the grain is fed whole on the ear, in horses. Dry chaff, bran, meal, and even oats are not unapt to accumulate in the gullets of horses and form a most dangerous cause of the accident, instances not being at all rare when the gullet, which runs down the left side of the neck, has been stuffed full for nearly its whole length.

Symptoms may be *general*, as shown by all the animals; *differential*, as indicating the part of the gullet in which the obstruction has taken place; and *special*, as belonging to the condition exhibited by the different animals.

General Symptoms. — Liquids, because they cannot pass by the obstruction into the stomach, are thrown out at once; there is coughing and more or less violent gagging, uneasiness, difficulty in breathing, champing of the jaws, and flow of saliva from the mouth.

Differential Symptoms. — When the cause is lodged in the throat, there is great distress, coughing, slavering, symptoms of suffocation, and, in dogs particularly, ineffectual attempts at vomiting. If the obstruction is in that part of the gullet which runs down the neck, a swelling will be seen on the left side, at the given point. General symptoms are more or less intense, and the animal, with anxious face, lowered head, tremors, and partial sweats over the body, shows considerable exhaustion within a short time.

If the offending substance be lodged in the part of the gullet which passes through the cavity of the chest on its way to the stomach, the fact of the presence of this dangerous form of the accident is shown by the absence of the more urgent indications of suffocation; the temporary distention of the gullet, as it passes upward along the neck, whenever water is swallowed; urgent attempts at vomiting so long as the gullet remains so filled; with a rather rapid progress toward exhaustion.

When impaction occurs from dry feed, bran, oats, etc., the head will be depressed, the eyes bloodshot, mucus and saliva will be discharged from the mouth and nose, and there is an evident swelling along the left side of the neck.

Special Symptoms in Horses. — The animal suddenly stops feeding, begins to swallow hard and frequently. If he is not successful in thus getting rid of the trouble, a sort of spasm follows, in which the neck becomes more or less curved, with the chin drawn back towards the counter, and, in rare instances, after a considerable continuation of the spasm, the animal shrieks; and the general symptoms are present.

In Cattle. — The animal stands with head extended, a profuse flow of saliva from the mouth, cough, and champing of the jaws, together with frequent gulping efforts. The eyes are bulged and bloodshot; he passes both manure and urine frequently. Very soon after the obstruction has taken place the paunch begins to be filled with the repressed gases of digestion and unless the obstruction to its upflow is soon removed, or a puncture is made through the flank, to let the gases out, the animal will die of suffocation. The general symptoms are present.

In Sheep. — The animal stops feeding, the breathing is more or less difficult, the paunch swells, and the case proceeds as described in cattle.

In the Dog. — Of the general symptoms, violent attempts at vomiting and a persistent cough are the most conspicuous special signs.

Treatment. — Various methods of relief are pursued, depending upon the position and character of the obstruction. These are: *First*, by the hand, and may be used successfully whenever the obstruction is at the back of the mouth or in the top of the gullet. The jaws are to be safely held apart by the insertion of a proper instrument (mouth speculum), if it is possible to obtain one; if not, a round iron ring of sufficient strength and size, a stirrup, or even a plow point *may* be used, but these last are of danger to the operator's arm, which may be easily broken if the instrument is allowed to slip out of the animal's mouth at the wrong moment. An assistant should attend to keeping the mouth open, while the operator attempts to grasp the object with his fingers and withdraw it; a whole apple is the most difficult to get hold of, but still its removal can be effected after patient effort.

In *Sheep* this method is more difficult than in horses and cattle because of the narrowness of the mouth. In dogs it is fairly easy provided the animal is held still by a sufficient number of assistants; the operator is to use his fingers in this animal, which can be done because the mouth opens wide and the parts are quite readily reached. Instruments, as long forceps, can be used in sheep and dogs, if proper ones are obtainable.

If the object cannot quite be reached in this way, an assistant should grasp the outside of the throat below the obstruction and attempt to push it upwards until it can be grasped by the operator.

If a solid object is lodged below the reach of the arm, an attempt to push it along into the stomach should be *carefully* made. The proper instrument for this purpose is a strong, fairly elastic tube having a "cup" end, of sufficient size and strength, called a probang. When this is not obtainable the butt end of an elastic horsewhip may be tried for all of the animals excepting the dog, but great care must be taken not to wound or push it through the walls of the gullet, for, if this is done, the animal will die. Before this attempt is made a small quantity of raw linseed oil should be turned into the throat, that the parts may be properly lubricated.

In horses choked with bran, oats, etc., if the obstruction is not too extensive, very much for good may be accomplished by repeatedly turning cold water down the throat and working over the upper end of the obstruction from the outside, with the fingers, giving the animal good opportunity to cough up such portions as have been so loosened, from time to time. No attempt should be made to push such an accumulation on into the stomach. If the services of a veterinarian can possibly be obtained, they should immediately be sought in all of these instances.

Crib-biting and Wind-sucking in Horses.

Causes. — A crib-biter can generally be detected by the worn-off appearance of the outer edges of the front teeth of the upper or lower jaw, or both, which is caused by the unusual wear due to the more or less constant grasping of the edges of the manger, or other hard substances, with these parts of the teeth.

Symptoms. — In the act of "cribbing" the horse grasps an object with the teeth, fixes his head, curves his neck, and some say eructates gases, while others say he swallows air. The last seems more probable because, if allowed to go on, the belly of the horse gradually becomes distended, and he has an attack of wind colic; while if a strap is put around the throat and buckled sufficiently tight to prevent him from swallowing, no such distention takes place. The horse may carry this bad habit to such an extent as to injure his digestion so considerably as to make him unable, by loss of general strength, to do the full work of an animal of his class, besides which he must either wear a strap or constantly be subject to an attack of wind colic that may cause his death; such an animal is *unsound*. In cases where the act is simply confined to "biting," and in which no air is swallowed, the act is simply a vice, not an unsoundness, but it renders him of much less money value than he would otherwise have been.

Treatment. — The only thing to be done is to do away with the manger or any other hard object which the horse bites, or by constantly keeping him muzzled, except when he is eating, drinking, or at work. Wind-suckers must constantly wear a cribbing strap, unless it is found that the habit is prevented by the first named measures. Some wind-suckers get so that they will swallow air without first grasping an object with the teeth. It is said that the habit is often contracted by example, especially in young horses. It is *not* a disease, simply a nervous habit.

Disorders of the Stomach.

Vomiting. — This is the simple means by which animals discharge through the mouth or nostrils that which the stomach refuses to digest, or is likely to be injured by. All animals and all individuals are not equally as easily made to vomit as others; the horse performs the act with difficulty, and it was formerly thought that "no horse could vomit and live," because, in those that did, a *post mortem* examination discovered a ruptured stomach. But this is not true. *Cattle and sheep* seldom vomit.

In the Dog the act is commonly and so frequently accomplished while the animal is otherwise in apparent health, as well as when he is suffering from some disorder, that it almost seems as if he could "throw up" whenever he chose to do so.

The Symptoms are so well known as to need no description in this place. It should, however, be remembered that vomiting becomes a frequent and troublesome disorder in dogs when shown in connection with certain maladies.

Treatment. — In these cases in dogs it often becomes a matter of considerable importance to stop the vomiting if possible. This may often be accomplished by the use of ice water in very small quantities, as a teaspoonful in very obstinate cases, every half hour; or by the addition to this of a few drops of French brandy with each dose of water. Teaspoonful doses of pure lemon juice, well iced, will often succeed where other remedies have failed. From five to ten drops of tincture of opium given in the iced water often allays the irritation; but the opium should not be repeated oftener than each two hours, for three times, nor should any more of it be given at a time, after the first dose, than is absolutely required. Or the following prescription may be tried: Tincture of opium, ten drops; chloroform, twenty drops; cold water, two tablespoonfuls. This is to be well mixed and all given at one dose, to a dog as large as a setter or collie; it will be found more useful in instances where the cause lies back of the stomach. The practise of giving dogs quantities of drugs, to make them throw up, so commonly practised by some, cannot be too greatly condemned.

Acute Indigestion.

Wind Colic, Flatulence, or distention of the stomach and bowels with the gases of indigestion, may be caused by alterations in the quality of the juices of the stomach and intestines, and to various obstructions in the bowels; both of which will so hinder the progress of digestion as to induce fermentations of the food and the giving off of the gases.

Causes. — Certain foods, as Indian meal; which is of especially difficult and slow digestion, fed in full rations to horses, cattle, and sheep that are not accustomed to eating them; cooked food to horses and cattle; musty hay or oats; half-wilted grass; or any food, including fresh grass, to which the animal is unaccustomed, or that which is given in such quantities at a time as to over-distend the walls of the stomach. In *cattle* and *sheep* the condition is most commonly produced by damp grasses, turnip and beet tops, green fodder corn, and green clover.

Dogs, because they vomit so easily, are not particularly troubled in this way.

Symptoms in the Horse are generally sudden in their onset: there is a fulness of the belly; the animal is restless and shows symptoms of colicky pains, he lies down, gets up, paws with his front feet. If the stomach is distended, he will gulp wind and discharge saliva from the mouth occasionally; the superficial muscles tremble, and the animal sweats in patches. These are the earlier and less severe manifestations. In severe cases the pain is very acute; the horse throws himself about wildly and frequently looks at his flanks; the pulse and breathing are hastened and in some cases attempts at vomiting are made, which are rarely fully successful; if the food is thrown up it is discharged through the nostrils. If the belly is greatly distended and hard, breathing becomes so difficult as to threaten suffocation. At other times, when the belly is but "slightly distended," there will be very little or no manifestation of pain, but the horse remains dull, half conscious, breathes heavily, is made to move with difficulty, and attempts to press his head against the wall.

In Cattle. — The disorder is frequently called hove, dew-blown, tympanitis, drum-belly, etc.

Symptoms. — While he is eating, or shortly after, a swelling of the paunch appears about the left flank. This increases in size more or less rapidly, the animal lifts his head, pants and appears dull; wind is sometimes gulped up in the early stages, and he ceases to "chew the cud." In proportion to the rapidity with which the gases accumulate, the breathing becomes more labored; the animal moans; stands with an arched and stiff back; the tongue is protruded; eyes bloodshot and bulged; saliva dribbles from the mouth; the nostrils are rigidly expanded; and the belly, extended to the greatest extent possible, is "as hard as a board." Unless soon relieved the animal staggers, falls, and dies from suffocation. Death may occur in a few minutes or he may live for a number of hours, all depending upon the amount of tympanitis present.

Or, the malady may be present in a *chronic* form, when the symptoms are not nearly as intense as in an acute attack; in which instances there is a functional derangement of the digestive organs, which causes an attack of hove whenever green food is given.

In Sheep. — The symptoms will be the same as in cattle.

Treatment. — In horses: give at once a large dose of saleratus in one pint of cold water. If pain is marked, give two or three ounces of tincture of opium, with one-half ounce of water of camphor in a cupful of warm water; and repeat each two or three hours, as necessary, until the pain and fulness of the belly are lessened; after the first dose, no more than two ounces of the tincture of opium should be given at a time. If the distention is very great and not quickly relieved by the medicine, the gas *must* be allowed to pass away through an opening into the bowels; this, to be at all safe, must be done by one who knows the anatomy of the parts.

As soon as the great distress has been relieved, the horse should have a dose of cathartic medicine; this may be one and one-half pints of raw linseed oil; or a pill of aloes (see prescriptions), to which one-half to one dram of calomel has been added.

In Cattle. — If the distention is great, the paunch should at once be tapped and the gases allowed to escape. If this cannot be done, a good purgative should be given as soon as possible. This may be, for a good sized cow, one and one-half pounds of Epsom salts, half a teacupful of molasses, and a tablespoonful of ground ginger; the salts to be dissolved in three pints of warm water; all to be mixed and given at one dose.

In Sheep. — The treatment will be the same as for cattle; the dose of the Epsom salts being six ounces, with tablespoonful of molasses and teaspoonful of ground ginger, with one pint of water.

Dogs. — As the flatulence is never as urgent as in the other animals, one or two compound cathartic pills, or a good dose of castor oil will be sufficient. The animal should not be allowed anything to eat but milk, with lime water, in moderate quantities, given three times a day, for three or four days after he recovers from the attack; and his exercise should be quite limited.

In all animals the action of the physic may be hurried and eased by the judicious administration of injections of strong soapsuds given at a temperature which feels quite warm, but not hot, to the hand.

Spasmodic Colic in Horses.—This is another from of acute indigestion and arises from much the same set of causes as those given for the flatulent form just described. The *Symptoms* will be the same, excepting that there is no swelling of the belly, or sleepy stage, as described for the wind colic. This form of colic, if unassociated with organic troubles of the bowels, should never end fatally; that it is often supposed to do so is because the symptoms shown are precisely those of inflammation of the bowels in its earlier stages, and the attack has not been properly separated at the beginning. In pure colic the internal temperature is not raised; in inflammation of the bowels, from any cause, it is always raised and other symptoms of fever are always present.

The Treatment of spasmodic colic will be to stop the pain by the use of tincture of opium, as already advised; and, as recovery begins to be shown, raw linseed oil should be given in doses of from one to one and one-half pints, to which a tablespoonful of saleratus has been added. Injections of warm soapsuds will often aid the recovery and may be commenced as soon as the first dose of opium has been given, and continued each two hours.

In Cattle and **Sheep** two further forms of acute indigestion are met with, as, *Impaction of the paunch or rumen.* When an animal has swallowed a large quantity of moist food, grass, clover, fodder corn, etc., or some kinds of grain, the paunch may be filled to repletion and become quite distended from a process of fermentation setting up within the mass.

The symptoms are very similar to those of tympanitis just described, but they are not nearly as urgent and, if the distended paunch is firmly pressed upon, as by the closed fist, an impression will be left, for a little, as if the paunch was filled with dough. The appetite and "the cud" are lost, and the pulse is small and frequent.

Treatment.—Give at once a strong cathartic, as, in *cattle*, the dose of epsom salts already recommended, to which may be added from five to fifteen drops of croton oil; in *Sheep*, epsom salts as before advised, together with one drop of the oil. In addition to this, some stimulant may be required by some of the cases, and in varying quantities, as indicated by the particular animal. The agents to be used here will be either whiskey or the aromatic spirits of ammonia. (See dose table). The injection of warm soapsuds, as mentioned, will be especially valuable in these cases, as the first prime object is to unload the bowels as soon as possible. Certain cases will be met with in which it will not be possible to accomplish this object by means of medicine, in which instances the veterinary surgeon will be able to open into the paunch, through the flank, and remove a good part of the contents of the overfilled stomach.

Fardel-bound, Impaction of the Third Stomach, or "Grass-ball," Vertigo, etc., are names which with some others are given to a form of acute indigestion met with among *cattle and sheep.*

The symptoms in cattle vary considerably at the beginning of the trouble. It will be noticed that he goes about with rather a drooping head; that while the appetite remains fairly good he goes picking about and shows a little uneasiness occasionally; the bowels may be constipated or the opposite condition of them may exist. This goes on for from twelve to twenty-four hours, when suddenly the victim shows a wild look, with prominent, bloodshot eyes; the tongue is protruded and he breathes quickly; and the appetite is now entirely lost. After a little, marked delirium is shown; if the animal is tied by the head he will fall forward, drop onto his side, and lie with rigid, quivering legs, until the convulsive attack subsides. Cattle that are loose in a field rush frantically forward and indicate some loss of sight or total blindness, by stumbling over small obstacles or running their heads against trees or other objects. Sometimes the animals will tear up the earth with their horns, stamping and roaring in a most violent manner. There is no apparent desire to attack persons or other animals. According to its severity an attack lasts from an hour or two to several days, death being the usual result unless treatment is perseveringly and carefully kept up. In sheep the line of symptoms are about the same.

Treatment. — At the commencement give one full dose of raw linseed oil and saleratus; at the same time begin to give moderate doses of either the tincture of aconite root each two hours in two ounces of cold water, or the fluid extract of belladonna, clear, on the tongue, three times daily. Do not continue the aconite for more than one day or the belladonna for more than three days. After this, if anything more is needed, give to cattle from eight to twelve ounces of epsom salts with fifteen grains of quinine in three pints of water, not oftener than once in each twenty-four hours. This should not be continued after the bowels begin to move, or if they do not move quite satisfactorily, lessen the dose of salts, keeping up the full dose of quinine. For sheep give the same treatment but reduce the amounts of the medicines used to those proper for the animal. (See table of doses.)

Chronic Indigestion.

This frequently met with disorder occurs in all the animals, and in them presents itself under such a variety of circumstances as to make it difficult to lay down anything like an absolute description of its causes and symptoms, which, therefore, must be treated in a general way.

Causes. — These are chiefly errors in diet, though they are not always easily found and recognized. The food may be too stimulating, too dry, not nutritious enough, not sufficiently well chewed, and this may be due to bad or sharp teeth or a habit of "bolting" the food, as shown by many horses and dogs; the feeding times may be irregular; the food may be given in too large quantities at a time; and, in horses, drinking heartily just before going to work. Impaired nervous power oftentimes prevents the full and necessary movements of the stomach during the earlier digestion, or of the bowels later on. If a horse, ox, or dog is fed a full meal when he first comes in tired from work, he is apt to become a victim of chronic indigestion.

Symptoms are variable. The appetite may or may not be impaired, capricious, or even perverted, at which times horses, cattle, and dogs will eat a variety of unusual substances. At other times, although the animal eats enough, or more than that, of good food, he continues to lose flesh, sweats easily upon slight exertion, the coat looks unhealthy, and the skin becomes dry and hard (hidebound). The bowels discharges oftentimes, seem to be in perfect condition as to quantity, consistency, and color; there may be constipation, or a moderate diarrhœa may be shown, especially during exercise; or these two last conditions may alternate without apparent cause. In many instances urine of a light color is passed in large quantities; occasionally the secretion will be very noticeably scant and of a dark yellow color, and when passed it may cause some uneasiness to be shown by the horse or dog, as if from a burning sensation. Thirst may be considerable or not; a *horse* will perhaps show a slightly coated tongue and have a sour, pasty-smelling mouth; *dogs*, a heavily coated tongue and a disagreeable breath, and all animals may have little sores, like "canker," about the mouth or on the under side of the tongue. Small worms may be shown; if so, they will pass away as the digestion improves, without special treatment. Attacks of colic of more or less importance will be shown occasionally, especially among animals that have voracious appetites and are allowed to eat freely. All animals are dull and listless while at work or exercise; or they may seem active one day and dull the next.

Treatment. — All animals had better receive, at first, the usual dose of oil, whether the bowels are loose or not; but in those that already have dirrhœal symptoms, all exercise should be stopped for two or three days after the oil has been given; this must be followed by continual administration of some good tonic, for horses, cattle, and sheep. (See prescriptions.) For dogs the citrate of iron and quinine pills, with a powder of bismuth and soda, five grains of each, three times daily, given dry on the tongue. All animals should be carefully and regularly fed; in horses, cattle, and sheep no Indian meal or linseed cake should be allowed, until they have fully recovered. In dogs there is no better feed than milk with either wheat or graham stale bread or boiled rice well soaked in it, fed in rather small quantities three times a day; if the case is a bad one, with occasional vomiting and diarrhœa, a tablespoonful of lime water had best be mixed with each tumblerful of the milk.

Foreign Bodies in the Paunch of Cattle.

Not uncommonly these animals swallow such sharp-pointed objects as nails, hairpins, knitting-needles, small pieces of iron, and other similar articles. These bodies, when they have been swallowed, may gradually be pushed outward toward one side or the other and appear at almost any point and cause an abscess on the surface under the skin. If such an abscess is opened, the foreign body will be disclosed and can generally be removed without difficulty or danger.

At other times, and frequently, the sharp-pointed object is urged forward by the natural movements of the parts, through the midriff, until it pierces the heart and causes the death of the animal.

The Symptoms of this condition of affairs will be more or less abdominal pain, nausea, tympany, anemia, dropsical swellings about the dewlap; all accompanied by a fickle appetite and an obstinate diarrhea.

Treatment. — Nothing can be done to save the life and, therefore, as soon as it is determined that this cause is in operation, the sooner the animal is made into beef the better it will be.

Inflammation of the Stomach in Horses, Cattle, Sheep, and Dogs.

This condition may be *acute* or *chronic*

Acute Disorder. — It is thought by many authorities that this condition cannot exist excepting as a result of poisoning; and there is no doubt that such substances as arsenic, mercury, antimony, copper, wood ashes, and sometimes lead salts, are, as a rule, responsible for its appearance. Still, to some little extent among horses, cattle, and sheep, and to a greater extent among dogs, the disorder is seen and recognized when no question of poisoning can be entertained.

Causes. — Mineral poisons, or the presence in the stomach of some foreign or indigestible substance.

Symptoms. — Evidences of great pain, nausea, and, in the dog always, in the horse occasionally, vomiting. *The horse* looks around to the left flank, crouches, and cannot stand quiet or erect. The pulse is quick and, though strong at first, soon becomes feeble, irregular, and indistinct at the jaw; the extremities grow cold, partial sweats break out over the body; evidences of stupor appear, to be followed by unconsciousness, unless relief is given, and the animal dies either paralytic or in convulsions, the pain having been most intense throughout. In one case seen by the writer the spasms of pain were so severe as to pull the chin, at intervals, very nearly to the counter, and each severer spasm was accompanied by a loud shriek, but there was no vomiting. In two other cases, also seen by the writer, full vomiting took place. All three of these cases recovered.

In Cattle and Sheep. There is a highly disturbed condition of the nervous system, evidenced either by delirium, as shown in fardel-bound, insensibility, repeated convulsive fits, or paralysis of the hind extremities, with at first a more or less profuse diarrhœa, which, however, stops as soon as the nervous symptoms are well set up.

In dogs the evidences of great pain, frequent and severe vomiting are after a time followed by convulsions, paralysis, and insensibility.

The Treatment of acute gastritis will in a great measure be that for any inflammation of the bowels. The first thing will be to stop the pain as quickly as possible; for this opium offers the best hope. *Horses* may receive tincture of opium in doses of from two to four ounces, with twenty-five drops of tincture of aconite root in a cupful of warm water, each two hours, for as long as necessary; this dose may be increased or diminished as required; the horse above referred to as "shrieking" received eight ounces of tincture of opium at the first dose and after that two of four ounces each and one of two ounces. This is a very large quantity, but the animal needed it.

In Cattle and **Sheep** aconite and belladonna had best be substituted for the opium (see dose table), and a good dose, as one quart, of raw linseed oil can be given with advantage in many cases; if required it may be repeated in from eighteen to twenty hours. *In sheep* the dose of the oil will be from six to eight ounces. *In dogs* the constant vomiting becomes a very troublesome complication and must be managed under the rules already given, as, in the special nature of each case, seems to produce the best results. Always begin with moderate doses of tincture of opium, as ten drops for medium-sized animals, in a half teaspoonful of *iced* water, and repeat every two hours, if it is not rejected by the stomach; if it is thrown up, the stomach must be quieted by some of the other methods, and the opium tried again. An injection of morphine under the skin, given by one who understands the operation, will often be found exceedingly useful.

When any of the corrosive poisons are known to be the cause, whites of eggs, milk, linseed jelly, or even linseed oil should be given at once and repeatedly, to protect the walls of the stomach; after which, if the exact poison is known, its proper antidote is, of course, to be given. This should be done by a medical practitioner in each case. (See table of antidotes.)

Chronic Inflammation of the stomach may be met with as the sequel of an acute attack, but is much more apt to follow dietetic errors. It is exceedingly common among dogs, especially among those that cannot be kept from stealing from the refuse food deposits of the neighbors.

Symptoms. — In *horses, cattle,* and *sheep* are those of chronic indigestion, already described. In *dogs,* although there is a good appetite, the food is rejected by the stomach; there is considerable thirst and the animal places itself in a peculiar position by standing on his hind legs while both his front paws are stretched out to their full extent forward, thus bringing the chest nearly to the ground; and in this position he will stand for long periods of time together.

Treatment. — In *horses, cattle,* and *sheep* will be that already recommended for chronic indigestion. In *dogs,* tie the animal up and give iced water in small quantities at a time, *and nothing else,* for twenty-four hours. He may then begin to have small quantities at a time of milk and lime water, in the proportion of a tablespoonful of the lime water to each tumblerful of milk, three times a day; in addition to which *one teaspoonful* of finely chopped, lean, raw beef may be given once a day; this food can gradually be added to, by increasing the raw beef, as it is found that the animal stops the vomiting. From the commencement, and until the stomach becomes perfectly quiet, give one of the following powders, dry on the tongue, three times a day; subnitrate of bismuth and bicarbonate of soda, of each one dram, which should be well mixed together and divided into twelve powders.

Diseases of the Intestines.

Constipation, or torpid action of the bowels, occurs in all of the animals.

Causes. — The condition may depend upon intestinal obstruction, diminished muscular movements of the bowels (peristaltic action), or deficient intestinal secretions. Retention of undigested and waste materials in the bowels will lead, after a varying interval, to congestion or inflammation of the bowels.

Symptoms. — There will generally be a full and distended belly, although this is not constant; the motions are few, irregular, difficult, and attended with more or less straining. If the condition continues, the appetite becomes impaired, the strength lessened, and the pulse feeble and irregular; if the temperature rises to any marked degree, it is because congestion and inflammation of the bowels are commencing to take place. In some instances a yellow jelly-like mucous secretion is discharged, either alone or mixed with or covering the manure.

Treatment. — In many slight attacks a change to food of a more laxative nature will be all that is required, as, *to horses*, grass, carrots, potatoes not to exceed one quart at a time, bran "mash" made with warm water and with the addition of a tablespoonful of salt; to *cattle* and *sheep*, grass, beets, turnips, and bran mash; *to dogs*, milk with lime water, beef broth, oatmeal, vegetables with a little gravy over them, but absolutely *no meat*.

In the more pronounced instances, good doses of oil with saleratus should be given at once, and the food changed as indicated. The oil may be repeated *once*, if necessary, at the proper intervals, but no more than two doses should be given in any instance, and if this does not have the desired effect, the food should be considerably lessened in quantity until the bowels have been well unloaded. If colicky pains are shown at intervals to any troublesome extent, tincture of opium, in doses just large enough to stop the pain, mixed with a little oil, should be given to *horses* and *dogs*; aconite and belladonna to *cattle* and *sheep*. In all of the animals an occasional injection of warm soap-suds will give good results in helping on the action of the oil and in clearing out the rectum. It is sometimes found at the first examination of the ailing animal that the rectum is packed full of hard manure; this condition should always be removed, as with the hand in the larger animals, the finger or other convenient small instrument, as a teaspoon-handle, in the smaller ones.

The constipation being relieved, all of the animals should receive a course of some good vegetable tonic. (See prescriptions.) If, after this, constipation recurs to any marked extent, the animal should continue to receive the laxative foods as already suggested, and the tonic powders should be continued.

In old dogs that have a chronic trouble of this kind, five drops, more or less, of the fluid cascara may be given every night, or less often as required, in a teaspoonful of cold water. It is not good treatment to press the cathartic medicine too hard, for it will not accomplish the object if the two doses recommended are not sufficient; and, if given beyond the two doses, it may be the cause of an early inflammation. The writer has repeatedly seen horses go from seven to nine days without a motion of the bowels whatever, and then come out all right under the treatment advised.

Diarrhœa, is the general term applied to an unnatural fluidity and an increased amount of discharge from the bowels. It is met with as a functional disturbance of various nature, or as a symptom in the course of general or specific disease, as has been shown.

Causes. — The proximate causes of the great fluid discharges are excessive secretion from the membrane lining the bowels, which, in itself, gives rise to great increase of their natural activity. These conditions are, in their turn, due to direct irritation of the lining membrane from without, as, for instance, by food, foul water, worms, etc.; or, indirectly, to influences generated within the animal itself, as from various specific fevers; nervous conditions, as over exercise in some individuals, fear in some others, or any unusual nervous excitement. Perhaps of all the causes of diarrhœa the most frequent are injurious food and irregular feeding; sudden *changes* in the diet, especially from a dry to a moist or laxative one; drinking large quantities of water, when heated either by long exposure to the sun or after exertion; and feeding immediately after severe work or exposure to cold and damp. Fat horses that are used to no more than gentle exercise, as well as horses which have a highly nervous temperament, are especially liable to diarrhœa while being driven on the road, and this last form being due, as it is, to the constitutional make-up of the animal, is next to impossible to remedy; they can be *stopped* for the time by having a powder of gentian root and sulphate of iron (see prescriptions), mixed in their feed, but as soon as the powder is discontinued the diarrhœa generally commences again.

Symptoms. — The bowel discharges are semifluid, and may be with or without offensive odor. If the discharges are long continued, the animal loses flesh and the appetite becomes fickle. In some instances there is great prostration; colicky pains, or gripes, are not uncommon, and the breathing is hastened; unless these symptoms, together with vomiting in dogs or great prostration in any of the animals, are present the pulse is not usually hastened.

Treatment. — The exact cause should be carefully looked for and removed if possible. The animal should be tied up and kept so for as long as the discharges continue; and about one half of the usual dose of oil had better be given. Further than this, in most instances, medicines are not required unless the discharges are excessive, or the pain and general disturbance great. No cold water should be allowed, but, inasmuch as the excessive discharges of fluid generally give rise to a considerable thirst, a mixture of wheat flour and water should be given in reasonable quantities, a few swallows at a time and frequently. The body should be warmly covered, and, above all, defended from drafts of air. The diet should be that which is easily digested and quite limited in amount. If these simple measures are not sufficient an attempt should be made to check the discharges by the administration of very small doses of tincture of opium mixed with brandy or whiskey and water, not oftener than once in each two hours, always giving as little as it is found will *gradually* stop the discharges, which must not be checked too suddenly, as, by so doing much mischief may be caused. If pain is excessive, in addition to giving tincture of opium the belly may be rubbed with a good stimulating liniment, and the parts covered, as already directed, with a dry blanket or a flannel jacket. The use of astringent remedies, so commonly recommended, had better not be used, except perhaps in cattle and sheep.

Diarrhœa, the Scours, or White Skit in *foals*, *calves*, and *lambs*, differs from the diarrhœa of adult animals sufficiently to merit special consideration. This form of the disease, which is not so common in foals as among calves and lambs, may be looked upon as being a specific intestinal catarrh, and a very serious affection.

Causes. — It owes its origin to changes in the quality of the milk upon which it feeds; as well as to defective sanitary arrangements by which it may be surrounded.

Symptoms. — The malady usually appears during the first two or three weeks of life in the foal and lamb; but in calves it is frequently first shown at a somewhat later period, in which instances it is due to an attempt to change the food by adding a proportion of skim milk, and when the temperature and sweetness of the milk, as well as cleanliness of the various pails, etc., have not been properly attended to. The manure is at first of a greenish white color, and there is little or no pain expressed. Later on, or perhaps from the first in the more serious cases, the discharges are exceedingly sour, full of bubbles of gas, which indicate fermentation of the food; and there is considerable colicky pain. If the disorder goes on the little animal ceases to eat, loses flesh rapidly, sinks, and dies.

Treatment. — At the very first all errors in diet should be corrected. The food, which may well consist in part of skimmed milk, *must* be sweet, given at a temperature of about one hundred and one degrees, in small quantities at a time and at least four times a day at first; and all utensils used must be well scalded, sweet, and clean.

For medicines, give at first one small dose of either sweet or linseed oil, which will be useful in helping to remove the offending substances which are in the bowels; and for a little time add lime water to all of the milk allowed, the proportion of which will be one tablespoonful to each pint of milk. When pain and straining are prominent features, opium, chloroform, and camphor may be given as required, in a little slightly warmed water; or, if in addition to the pain the animal is weak, give the opium in a little brandy or whiskey. (See dose table.) If necessary, the belly may be rubbed with stimulating liniment and covered with dry flannel.

Inflammation of the Bowels. — This affection, always to be dreaded, varies considerably in its manner of declaring itself and in the intensity of the attack; it may be so severe as to destroy life within a few hours of its first appearance in horses and dogs. Cattle and sheep are not particularly subject to the disorder. The bowels are very seldom affected throughout their entire extent; by some it is said to attack the larger intestines more frequently than the smaller ones; this is more likely to be the case in horses than in dogs. The malady is more commonly seen in adults than in the young.

Causes. — As has been said the degree of the attack may vary widely; an animal, seemingly in perfect health, may be suddenly seized and die in a few hours. Of this variety the causes are not always apparent, but overexertion, long exposure to cold and wet, drinking cold water when heated, or washing the body of a heated animal with cold water, have been known to give rise to it.

The more usual form is of slower development, although the extent to which the process may finally reach is, in many instances, very considerable. This form is caused by local impactions of the bowels, constipation, twists, intussusception, worms, and various poisons, as already pointed out. In addition to this, the disorder may follow certain specific fevers, which have been specified.

Symptoms. — Excepting in the very sudden attacks soon followed by death, as explained, the animal will show a general constitutional disturbance, as indicated by hurried breathing, dulness, loss of appetite, with or without a marked shivering fit. Abdominal pain begins to be shown which, unlike that of colic, is continuous, rarely intermitting in the least, and evidently more painful. The pulse, at first quick, hard, and wiry, becomes later on more frequent, of less volume, more feeble, and finally imperceptible; in number it varies from seventy or eighty to one hundred and twenty, or even more, to the minute. The internal temperature generally runs to from one hundred and three to one hundred and four, although it may not exceed one hundred and two, or it may reach to one hundred and seven. As the pain increases, the horse stamps, strikes at his belly, and when he lies down he does so with greater care than in colic, for any increased pressure upon the belly now causes an increase of the pain, while in colic it often gives temporary relief. The animal looks toward his flanks, sweats copiously, and groans from excessive pain. At other times he stands almost motionless, so great is the pain caused by any movement of the body, his face plainly expressing the suffering he is undergoing. The surface of the body is covered, in patches, by a cold sweat, the pupils of the eyes are dilated, and delirium or stupor may follow. Or, he may become more restless than ever, wander about aimlessly, throw himself down recklessly, and roll violently, with apparent disregard of all obstacles.

At other times he will balance himself for a short interval, with teeth clenched, pulse imperceptible, legs and ears icy cold; when after a little he suddenly falls and dies exhausted, after a more or less severe struggle.

In other attacks an apparent improvement takes place before death: the horse stands at rest for a while, yet, though the breathing becomes more quiet, the symptoms of pain much less, and the animal will even eat a little, the face maintains its haggard, dejected appearance; cold patchy sweats cover the body; the pulse is nearly or quite imperceptible; and, after a little, he dies exhausted, with gangrene of the bowels.

In still other instances the animal persistently stands as already described, the body trembles continuously, the lips fall apart, the eyes become dull, the mouth cold and clammy, the breath smells badly, until at length, completely exhausted, he drops dead.

The Dog is very uneasy, cries continuously, gets up and down; if a cold floor or a pool of shallow water is within his reach, he will lie there flat on his belly, with all of the legs sprawled out. The face expresses great pain and anxiety; the pulse, temperature, and breathing are of the same character as described for the horse. Death usually takes place in from twelve to twenty-four hours.

Treatment. — It is very important that no cathartic medicine be given, because the bowels when inflamed are completely paralyzed, as are other tissues; and all attempts to move them will simply add to the intensity of the inflammatory process by crowding down material upon the diseased portion, which it cannot pass, but where it must remain and act as a further source of irritation.

If any hope of recovery is to be entertained, the case must be put under treatment during the very first of the attack; and the measures undertaken for the cure must be thoroughly and carefully persisted in until all danger is over; if active treatment is stopped too soon, relapse is apt to take place. The measures to be undertaken are to try and stop the pain by the use of tincture of opium, given in a little iced water, each two hours, in such doses as are indicated by the individual attack. In the first stages, while the pulse is frequent and comparatively full, the tincture of aconite root in doses of twenty-five drops, in two ounces of cold water, given each two hours, will be of the greatest service in helping to lessen the congestion and so the extent of the inflammation; the aconite *must* be discontinued as soon as the pulse begins to show weakness by becoming small and wiry. The belly should be covered closely with the "three-folded" blanket wrung out of very hot water, and that covered with a dry blanket, all held in place by two surcingles; the hot blanket should be repeated frequently at first; afterward, as the pain grows less, often enough to keep the parts warm; great care must be taken to wring the hot water blankets so dry, before they are applied, that water will not drop from them. The legs must be bandaged with flannel, and stimulating liniment may be used on them, if it seems to be required by their persistent coldness. Although no cathartics should be used, the bowels had better be occasionally solicited to action by the use of hot soap-suds injections. If the animal is inclined to drink he may be allowed iced water freely, a few swallows at a time each ten or fifteen minutes, with the best results. The greatest quietude possible should be maintained throughout the attack; and on no account should the animal be taken out and made to walk, as is too often done. After recovery, soft sloppy food, as oatmeal gruel, hay tea, milk, and raw eggs, should be given in small quantities at a time, for three or four days, or until all danger of relapse is passed, and even then the return to the usual food should be made gradually and carefully.

Diseases of the Urinary Organs.

Ailments of these organs, meaning the ureters, kidneys, and bladder, which in mankind, for reasons easily appreciated, are so various and important are in the animals few in numbers, of rare occurrence; and their detection when present is so difficult, needing, as it does, the use of chemical tests and the microscope; and the remedy is so apt to be of the nature of surgery, that the services of a veterinarian should be obtained whenever their presence is suspected. The same may be said to be true of diseases of the organs of generation, even in a greater degree.

Diseases of the Nervous System.

Inasmuch as the structure of the brain in animals is far less complex than it is in man, and as it forms a much smaller proportionate share of the weight of the body, nervous diseases are of far less frequent occurrence in them.

Inflammation of the Brain.

Causes. — Blows upon the head, which injure the bones of the cranium, or rarely diseases of these bones; exhaustion and exposure, especially to a hot sun; as a result of certain fevers; from the entrance into the system of such specific germs as those of rabies, etc.; as well as in connection with certain forms of indigestion.

Symptoms. — When the covering of the brain is the first to be implicated, the attack is noted for the suddenness and violence with which the disorder asserts itself. The general indications are fever, with a sharp, hard and irregular pulse; a high temperature; irregular breathing; and constipation.

There seems to be much pain in the head, it is held stiffly or even pressed into a corner or against a wall; the pupil of the eye is contracted; there is a look of sullenness; there may be convulsive muscular twitchings, actual delirium, or strong convulsions if the malady is extensive. Sudden noises will increase any of these symptoms. If this first stage is survived, there will be within from a few hours to two days a new line of symptoms, which indicate that the disorder has progressed sufficiently to complicate the deeper brain tissues.

The fever subsides, the temperature is lower, the pulse less frequent, the breathing becomes heavy, the excitability or delirium is gradually lessened; special sensation, as from the prick of a pin, becomes dulled The animal will, if standing, remain listlessly in one position, the head lowered, the eyes glassy, with their pupils dilated. Control over voluntary movements becomes more and more disturbed until he falls; convulsions, followed by insensibility, with snoring, breathing, are then shown; the eyes are open and paralyzed; the body is covered by cold sweats; all of the natural openings are relaxed; and death soon follows.

Treatment. — The usual *full* doses of cathartics for the different animals should at once be given. (See prescriptions.) Cold water or ice should be constantly applied to the head, so far as it is possible. If this is not possible, sop the poll of the head frequently with a good cooling lotion, as: liquor of the acetate of ammonia, one ounce; alcohol, two ounces; water, five ounces. Or, instead, this one: chloride of ammonia, one half ounce; alcohol, one ounce; dilute acetic acid, one and one half ounces; with water enough to make an eight ounce mixture. For the purpose of further lessening the diseased action, there is probably nothing better than iodide of potash, which may be given in large doses every four hours, if possible. Should convalescence happily follow treatment, great care must be taken to keep the animal where it is quiet, and give him easily digested food for a time, or relapse is likely to occur.

Other disorders of the brain, as chronic thickening of its coverings, softening, hardness, tumors, etc., will be discovered only by the expert veterinarian, and they, as well as apoplexy of the brain, are of such a hopeless nature and occur so rarely that their description here seems to be unnecessary.

Concussion of the Brain without Fracture of the Skull.

Although the skulls of animals, horses, cattle and particularly sheep, are fairly well guarded from the effects of accidental blows upon the parts of them covering the brain, still it not unfrequently happens that blows are received of sufficient force to cause insensibility of longer or shorter duration and importance.

Causes. — The condition is apt to occur in horses that rear and fall backward, striking the head upon the floor or other hard substance; that run away and end up by striking the head against a brick wall or plate-glass window; or to any animal that receives a blow upon the parts, as from a club or otherwise, which is of sufficient force to cause stupor, more or less insensibility, and loss of muscular power, from which he may rally quickly or not for many hours; or from which he may die almost at once or at the end of some days of insensibility.

Symptoms will vary in accordance with the degree of concussion.

When the shock has been but a slight one the animal soon recovers from the unconsciousness, showing nothing more than a slight stupor with some unevenness of muscular action in walking, all of which pass off after a rest of two or three days, at most. When the blow received has been more severe, the insensibility continues longer; the animal lies as if in a deep sleep; the eyes are paralyzed; the body surface cold; the muscles soft and relaxed; the pulse fluttering or feeble; and the breathing weak and sometimes almost imperceptible. From this condition the animal gradually recovers in favorable instance; or slowly sinks and dies without having regained consciousness.

Treatment. — At first quiet. If after a few hours some degree of consciousness has returned and reaction seems to be strong, the head of the animal should be raised and placed comfortably on bundles of straw or other convenient article, and finely pounded ice in a bladder or rubber bag put onto the parts, which may be all that is required. Generally speaking, however, the depressing effect upon the system is so great that stimulants, such as brandy or the aromatic spirits of ammonia, properly diluted in cold water, should be cautiously given. At the same time, so long as the body surface remains cold, the animal should be rubbed, blanketed, bandaged, and made as warm and comfortable as possible. Further treatment will consist in keeping the bowel discharges in rather a loose condition by a proper regulation of the food, if possible; if not, by the use of small doses of oil or epsom salts.

Sunstroke follows exposure to hot sun rays in an overheated atmosphere, in some individuals; and affects horses, cattle, and dogs.

Causes. — Horses are generally attacked during work; cattle and dogs when they are confined, as in a small yard where no shade is obtainable, for a length of time.

Symptoms. — It may be noticed that the horse does not sweat as he should; it will be noticed that he seems dull, becomes unsteady, and then falls, lying more or less fully insensible. The other animals lie and pant until they gradually become more or less unconscious. The skin is hot; the breathing difficult; the heart's action irregular; and, just before death, the breathing gets gasping.

Treatment will consist in removing the animal to a cool, shady place, or in erecting a temporary shade over him where he lies; cold water sponging of the head; the judicious administration of stimulants, as brandy or ammonia, as soon as the animal is able to swallow, with, as soon as he can drink, iced water in small quantities at a time, but at frequent intervals.

Blind Staggers; Vertigo; Cerebral Congestion.

This is one of the most frequently seen disturbances of the brain in horses, as every one knows.

Causes. — Temporary congestions of the brain are seen in horses of all makes, shapes, and sizes, and are generally dependent upon some condition of indigestion, together with exercise too soon after eating. "Fits" in dogs are often of this nature and due to the same causes. Their occurrence may also be due to a plethoric condition of body; to certain disorders of the heart, either functional or organic; or to any cause through which the proper circulation of the blood is so interfered with as to allow too much of that fluid to reach the brain, or to be retained in that structure, as by a badly fitting "breastplate" or collar.

Symptoms. — These are invariably sudden in their appearance. If upon the road, the horse slackens his pace or suddenly stops; there is a shaking of the head as if some object had entered the ear, or the head is "tossed" up and down. The blood-vessels of the neck and head look full; the eyes stare; the nostrils are held wide open; the breathing is rapid, with perhaps some little noise; the muscles of the face and neck show a slight, rapid, twitching movement; the body is covered by a moderate sweat; and the front legs are braced apart, as if for support. Occasionally, the attack proceeds no further, when after a few moments the animal proceeds on his journey in a listless way at first, afterward with his usual interest.

When, however, the case is one of greater severity, the muscular twitchings become more extensive; excitement is greater, until action reaches to beyond the control of the animal; he plunges forward, bolts, or rears and falls to the ground. The paroxysm rarely lasts for more than a few minutes.

Treatment. — The first indication will be to remove the cause, if it is due to pressure from the collar or breastplate. All further necessary treatment in any case will be to dash cold water onto the head, until all excitement is passed away; or, if this cannot be done, hold the animal as still as possible until the fit passes off, which will be, as a rule, but a very few minutes. The common practise of "bleeding" these horses in the mouth is entirely without effect, for the amount of blood that is thus allowed to escape is so small as to have no effect whatever upon the animal. Besides which, the operation is not without danger to the horse, because, if the cut is made at all deeply, at the part usually selected, the third "bar" behind the upper teeth, a rather large artery will be opened, which, because of the hard nature of the tissues in which it is situated, is exceedingly difficult to close.

Diseases of the Spinal Cord.

The spinal cord, in connection with the brain, is the organ of sensation and voluntary motion to the trunk and extremities in all animals. If the cord or its coverings are injured in such a way as to cause the slightest pressure upon them, there will be more or less interference with the motions of the animal *behind* the affected portion. When the pressure is slight the animal can walk, but does so in a more or less uncontrolled manner. If the pressure or injury is extreme, there is complete paralysis of the parts behind it.

Acute Inflammation of the Cord and its Coverings.

Causes. — The cord and its membranes are subject to inflammations, which may be due to a fall, to heavy blows upon the back, as well as to certain fevers which affect the parts.

Symptoms. — If the cord itself is much implicated in the process, preliminary symptoms are entirely absent, paralysis being the first thing that is noticed. On the other hand, if the covering membranes are first affected, there will be spasmodic contractions of the large muscles behind the seat of injury. The animal will seem as if suddenly seized with a "cramp" of the hind legs; the feet are lifted rapidly and in a jerking way from, and are in the same way placed again upon, the ground; and while these movements evidently cause pain the animal does not seem to be able to stop them at will, although at this early stage there may be short periods of rest and freedom from them. As time goes on the spasms become more frequent; the animal sweats freely, and is restless; this may continue for some hours, rarely exceeding twelve; finally, the animal becomes paralyzed behind and falls to the ground.

Treatment should be conducted upon the general principles already advised in inflammatory disorders, excepting that here a large dose of physic should always be given at once, and a folded blanket, carefully wrung out of very hot water, should be put over the back, covered with a folded dry blanket, and all held in place by two surcingles and changed often enough to keep the parts warm.

Chronic Inflammation of the Spinal Cord.

Shivering. — *The broken, sprained, or "jinked back," as recognized by some horse owners.*

In addition to the active forms of inflammatory disease of these parts, as just described, which run their course rapidly and terminate in death or, more rarely, in a gradual decline of symptoms, there are, in the horse, conditions in which there exist certain irregularities of action, with a gradually increasing failure of motion, which, after a long time, end in more or less complete paralysis of the hind extremities.

Causes. — These are not generally known; it is extremely probable that the animal has received, at some time or other, a slight application of the causes of the acute form; that he has slipped in backing heavy loads, in a way that has caused some little over action of the backbone; or that there may be a bony growth upon one of the bones of the back, which, gradually increasing, causes, slowly, more and more pressure upon the coverings of the cord.

Symptoms are generally first noticed as the animal is being backed out of his stall, when, at first, there will be some apparent reluctance in lifting the hind feet; then, in some cases, when the foot is lifted and moved backward in the air, there is a "shivering" of it, as if an attempt were being made to shake off some offending substance; or there may be a violent "string halt" action of one or both hind legs. After a varying time the animal shows less disposition to lie down than formerly; or when down there is greater difficulty in getting up, until finally it comes that the horse must be helped before he can gain his hind feet, after which he generally seems to prefer to stand day and night. Together with these symptoms, and coming on very slowly, a marked deficiency of muscular power is shown, he almost refuses to back, or does so with difficulty; his hinder parts roll from side to side more or less weakly, as he moves forward; next he shows badly in turning; he begins to "knuckle" at the fetlocks, to interfere, and finally becomes more or less paralyzed, and has to be destroyed.

Treatment will consist in an endeavor to stimulate the parts to regain their healthy action; and this is to be accomplished, if at all, by the use of strychnine (see prescriptions) and repeated blistering of the back, or, perhaps, by firing and blistering along each side of the backbone. In blistering the back care must be taken not to use too much of the cantharidine ointment, or to rub it in too hard, or else it will permanently destroy the hair. Horses with this trouble should be kept in slings while in the stable, to prevent them from being "cast" in the stall and further injured.

St. Vitus' Dance (Chorea) in Dogs.

Causes. — The most frequent cause of this uncontrollable twiching of various muscles, or groups of muscles, is undoubtedly an after effect of the "distemper" poison. It may also arise in young dogs as a result of the irritation caused by intestinal worms; or by teething, in some cases.

Symptoms. — Chorea generally begins, and especially so if following an attack of distemper, with occasional spasms of the temporal muscles; or it may show itself in other muscles of the face, or even those of the eyes; or there may be a constant jerking of the head and lower jaw; of the fore legs; or, in fact, of any of the muscles; and, after the symptom is well set up, the twitchings of the affected muscles will have a marked regularity of action. These movements do not cease while the animal is lying down, but they frequently do while he is asleep.

The stomach and bowels are usually deranged; the appetite is fickle and irregular; constipation is troublesome; diarrhœa is rarely present. In some cases the dog will return to perfect health, except for the continued twichings, and remain so for years, but if the chorea attacks while the animal is in a debilitated condition, and especially if it immediately follows an attack of distemper, either because the restlessness causes increasing and distressing debility, or else because of the further action of the distemper poison upon the nervous system, the chorea is gradually followed by attacks of convulsions, more or less insensibility, paralysis and death.

Treatment. — The only plan of medical treatment to be recommended will consist in regulating the bowels, subduing irritation as much as possible, and strengthening the system. For these purposes the employment of stimulating cathartics, if they are necessary, as they usually are, such as calomel and jalap, or, more conveniently, the compound cathartic pills, of the drug shops, in sufficient numbers to produce the required action, as from one pill in small dogs to two or three in the larger ones, had better be used once, or if necessery twice, at the beginning. After that a five-grain tablet of cascara compound, or ten drops of the fluid cascara, in a little water may be given each night, or less after or in a smaller dose, as required. For subduing the irritation and quieting the animal give bromide of potash, in doses of from five to ten grains, two or three or four times a day, as demanded by the case. There is no better tonic in these cases than the pill of citrate of iron and quinine, one grain of each to a pill for small animals, two grains for larger ones, given three times a day. The tonic should not be given until after the more severe symptoms of irritation have been overcome.

The diet must be nutritious, chopped raw beef, milk, and eggs forming a good share of the food, which should be given in small quantities at a time, three times a day. If the symptoms come from the presence of intestinal worms, treatment for the removal of them should take the place of the carthartic. If from dentition the local irritating condition so caused should be properly attended to.

At the commencement of severe cases a warm bath for fifteen or twenty minutes every other day will often afford great relief; of course care must be taken to prevent the animal from getting chilled afterward.

Big Leg in Horses (Lymphangitis).

In this disorder of the lymph vessels, one or both of the hind legs will be found in the morning to have suddenly become considerably swollen over night.

Causes. — Irritation of lymphatic glands, that are in connection with some of the digestive organs, with extension of the trouble to the lymphatic vessels of the affected limb. It is a frequently seen disorder, more especially in animals that are overfed during short periods of idleness.

Symptoms. — If noticed early enough it will be seen that the horse has a shivering fit. As this subsides the animal becomes restless; fever follows and lameness begins to be shown in one or other of the hind legs. These various stages are quickly gone through with; the pulse is increased from seventy to, rarely, one hundred beats in the minute, and is hard and cord like. The breathing is hurried; in the severer cases it may number as many as from forty to fifty and be accompanied by a slight blowing noise. The temperature will be from one hundred and two to one hundred and four; the appetite is lost; there is great thirst; and the bowels are constipated. The swelling, which will first be noticed on the inner side of the leg along the course of the large vein, when pressure, if made as by the finger, will cause considerable pain, gradually extends to embrace the whole limb. The pain, heat, and tenderness in the part increases until the height of the fever is reached, and then remains stationary for a day or two, when it begins to slowly subside and continues so to do until it again reaches its natural size.

Unless care is taken to prevent it, the attacks are repeated at intervals until finally the animal is left with a chronic big leg.

Treatment. — The remedies are few, but they must be promptly and persistently employed. The whole limb is to be thoroughly and frequently bathed throughout its whole length with warm water. Considerable relief may be afforded by rubbing a little fluid extract of belladonna onto the skin over the course of the large vein on the inner side of the leg, between the times of bathing it, especially letting it remain on during the night. The bowels are to be thoroughly cleared out with a good dose of raw linseed oil and saleratus (bicarbonate of soda). Tincture of aconite root in doses of from twenty to twenty-five drops each, in two ounces of cold water, had better be given every two hours, for six times, during the oncoming of the fever. After the oil has operated, one ounce of saltpeter, given in the drinking water through each day, will aid in reducing the size of the leg.

Walking exercise is generally recommended, after the fever has passed, to help reduce the size of the limb; and while it is true that size can be *temporarily* lessened in this way, it is just as true that, by it, the *ultimate* period of recovery will be delayed; dry hand rubbing will give better results. The condition of chronic big leg is beyond cure generally; an attempt may be made by rubbing the leg once a day with a liniment made of equal parts of the soap liniment of the drug stores, and tincture of iodine. The iodide of potash in fairly good doses may be given internally, dissolved in water, three times a day.

Diseases of the Skin.

Of these there are so many different varieties, each one of which has such a number of subdivisions, that no more than a few of those most commonly met with can be described in this place. It may, however, be said that the greater number of skin diseases are secondary affections; and in attempting to cure them the treatment must be directed both to the removal of the internal cause, which is generally digestive in its nature, and the healing of the skin itself by local applications.

Nettle Rash (**Urticaria**) is characterized, in the horse, by the sudden appearance upon various parts of the skin of prominent, elastic patches of a roundish or oblong shape, varying in size, at their bases, from that of a nickel to, rarely, that of a half dollar.

Causes. — It is due to some disorder of the digestion, which may or may not be attended with some of the usual more noticeable signs of such disorder, as fever, diarrhœa or colic, all of which, however, if present, disappear as the eruption comes out.

Symptoms. — Whether some little digestive disturbance has been noticed or not, the eruption appears suddenly, beginning generally upon the neck and from there extending to cover nearly the entire body, at times; or it may be shown on one part of the skin, suddenly fade from there and appear on another part. The rash is sometimes accompanied by slight itching.

Treatment. — Give a mild purgative, as oil and soda, which had better be followed by the administration of a powder made of equal parts of cream of tartar and sulphur; the dose will be two teaspoonfuls, morning and night, mixed with the grain food; this should be continued for about one week. The horse may be used again as soon as the effects of the oil have passed off.

False Ringworm (**Creeping Teeter**; *Herpes circinatus*) is a more contagious affection consisting of one or more clusters of little blisters upon slightly inflamed patches of skin, which are often so shaped as to closely resemble true ringworm, which is a contagious disorder of the skin.

Causes are digestive.

Symptoms. — There is an eruption of little blisters upon inflamed patches of skin, which assume a circular form, the circles varying in size and sometimes including an area of healthy skin. The circles increase in size by their circumferences.

True Ringworm can be distinguished from the false by making a careful examination of the hair of the affected parts, which, in the contagious disorder, will be found to have about them a complete whitish sheath, to break unevenly, to be ragged at their ends and have the appearance of having been eaten through; their broken stumps are much altered, bent, twisted, and lighter in color than the healthy hair.

Treatment of creeping tetter will be to regulate the diet under rules already mentioned. If there be much itching a dose of cathartic medicine had better be given; otherwise, one ounce of saltpeter, divided into three equal parts, one of which is to be given in the drinking water or on the food, three times daily, and continued for a week or ten days, as required, will generally be all that is necessary in the way of medicine. The irritation of the skin may be relieved and cured by the application of zinc ointment, or the ointment of the subacetate of lead, both of them as ordinarily prepared by the druggist. A simple dusting of the parts with powdered starch will oftentimes be all that is required in the way of local treatment.

Treatment of Contagious Ringworm. — Put the animal in a place where he will not come into contact with any others; be careful that nothing that touches or has been used upon the diseased animal comes in any way in contact with a healthy one. Feed lightly; give no exercise; and rub all of the diseased spots, once a day, with a mixture of one part of soap liniment to an equal part of the tincture of iodine. If, after a few days of this treatment, the skin does not seem to be improving, increase the strength of the solution by adding one-half part more of the iodine to the original mixture; if it is found that this increased amount of iodine is beginning to blister the parts, use it once every other day, only. If the disorder is not cured in this way within a week or ten days, a veterinarian had better be called in to see the case.

Eczema (often mistakenly called mange, red mange, etc.) is the most commonly seen skin disease in dogs; it also affects horses, cattle, and sheep, especially lambs. It is not contagious, but is very apt to recur.

Causes. — It is invariably due to dietetic errors, from over feeding, or from insufficient exercise, while eating food that is too heating in its nature; too much meat, indian meal, or dog biscuit, in dogs, indian and oil meal, in horses and cattle, or clover or buckwheat, in sheep or lambs that are being prepared for market.

Symptoms. — In the earlier stages there is an eruption of small blisters on various parts of the skin, closely crowded together and often running into each other, so as to form, on being broken, superficial moist excoriations, which in a short time afterward are dried into scabs and crusts. The heat of the skin, together with the irritation caused by the scabs, produces considerable itching, and the scratching and biting of the parts by dogs, and the rubbing of them against walls or similar objects, by the other animals, soon produce excoriated patches of larger or smaller sizes upon the surface of the skin, from which oozes a yellowish fluid in small quantities, or even a small quantity of blood. These, when they occur, add considerably to the pain and itching; the animals scratch and rub more persistently and, unless the disorder is cured, the skin begins to thicken, the hair to fall off to a considerable extent, and the animal either grows rapidly thin and dies, after a time, from exhaustion, or else the malady takes upon itself a chronic form, which will be a long time in getting well, although it is curable. There are a considerable number of sub-varieties of eczema, but their differences do not need to be pointed out here.

Treatment. — The diet should at once be changed and regulated in accordance with the general rule: bread and milk with lime water for dogs; grass or roots with sound hay and a moderate feeding of oats and bran, with salt, to the others. In very mild cases these changes alone will often be all that is needed, especially if the animal is kept from scratching, biting, or rubbing the skin by, in dogs, muffling the hind feet and taping the mouth. More often the cases are obstinate and, for a time, will seem to resist any application that may be made to them. There is, perhaps, no disorder of the skin which has had a larger variety of drugs applied to its remedy than this one; this only goes to show the very untractable nature of the malady, at times; it does not necessitate the recommendation of a long list of remedies. The one remedy which can be relied upon to bring about a cure more often than any other one is the sulphur lotion. (See prescriptions.) This, if made as directed, will have a strength of one part of the sulphur to eight parts of water, and may be used in this strength on all animals that do not have large bleeding surfaces, as described, in connection with the trouble. On them, as well as on lap-dogs and lambs, when the skin is very delicate, the lotion should be reduced by adding two ounces of water to each four ounces of the lotion; if this is found, after being used for a day or two, not to cause too much irritation, its strength may be gradually increased until the original strength of the lotion is reached. The lotion should be *well* rubbed onto all of the diseased parts once daily, and the animal held still for ten or fifteen minutes or until the application has partially dried. If the disorder is freely spread over the body, the dog had better be clipped, or else the skin will not be sufficiently well reached. In instances when the eczema is confined to scattered, small, hairless, patches, wherein the itching is considerable, a solution or ointment of Icthyol may often be used, once daily, with markedly good results. (See prescriptions.) If the case is one that is beyond the power of cure by one or the other of these remedies, a veterinarian had better be called.

Scratches in the Horse. — This is a well-known and troublesome disorder occurring on the skin, just below the fetlock and behind the pastern bone.

Causes. — The exciting cause is exposure of the parts to melting snow, mud, and water. While all horses are subject to it, there are some that never have it and a few others that are never without it. It is very much more apt to affect horses that show poor condition, due to bad digestion, than those that are in good health.

Symptoms. — The skin of the part first becomes very slightly swollen, hot to the touch, and in white-haired horses it will be seen to be quite red in color. After a very short time, if the animal is continued at work, small horizontal cracks appear and rapidly deepen, discharging at first a yellowish fluid which afterward becomes mixed with blood, and the legs begin to swell. The edges of the cracks widen and scabs appear upon them, which have a strong tendency to form a horn-like material and become a source of considerable irritation. The animal starts off lame, but after a little goes sound, until he is allowed to stand for a while, when he again goes lame for a little.

Treatment. — If noticed before the cracks have become at all large or deep, the animal should at once be taken from work, put into his stall, and have the parts poulticed with linseed, or oil meal, and warm water, for twelve hours; after which the zinc and lead lotion (see prescriptions) should be freely sopped onto the scratches and the horse allowed to remain idle until well. In the more advanced cases the treatment should be the same, excepting that the poulticing should be continued longer, and all of the scabs must be removed from the edges of the cracks every day, before the lotion is put on, until they cease to form; when zinc ointment may be used in place of the lotion. All cleaning of the parts, as from the poultice or other material, should be done with dry cloths; no water, or soap and water, should be used at any time. If the horse must be used, he should be poulticed over night, the sores carefully cleaned in the morning, and the zinc ointment should be well rubbed into the parts before he starts out. This will help matters considerably, but a cure will, probably, not be made until after he has been allowed to rest.

Burns and Scalds.

These happenings vary much as regards their local and constitutional effects, according to the degree and duration of the heat applied, the extent of the surface involved, the seat of the mischief, and the vital power of the animal at the time of injury, because great depression follows immediately after extensive injuries of the kind. They are conveniently divided into four classes:

First. The burn which produces simple inflammation of the skin may be *caused* by the momentary application of hot water or steam, by exposure to the rays of a strong fire, or by *momentary* light contact with a hot object or a very small flame.

Symptoms. — Unless the extent of surface injured be large, the constitutional disturbance is slight. The skin in white-haired animals is seen to be red; in all of them there is more or less removal of the hair, slight swelling, and severe pain, which lasts for some hours. In a few days the outer skin peels off and the hair gradually returns as if it had not been removed.

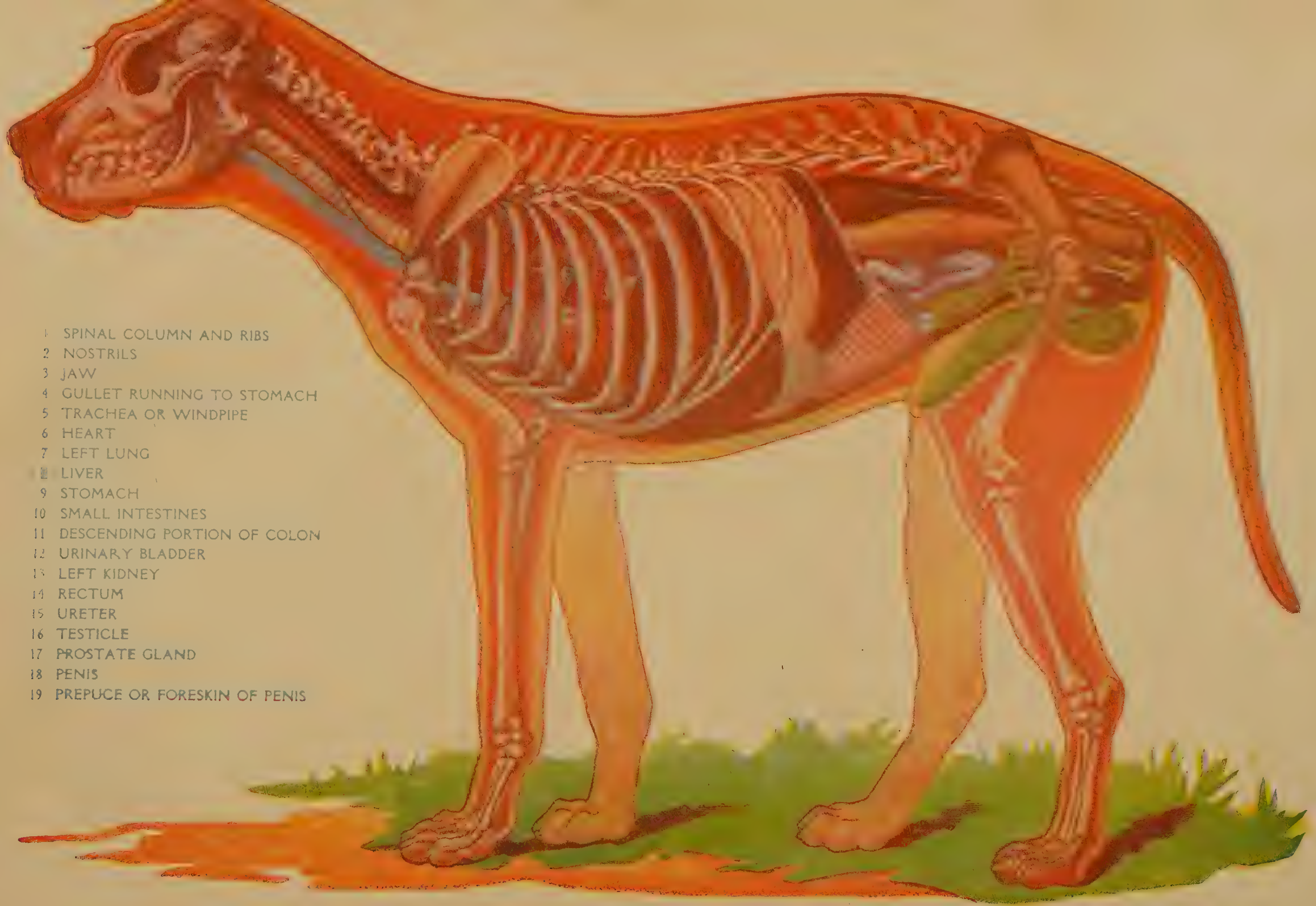
Treatment. — When anything is required, some heavy oil, as linseed, should be applied to the burned surface and that covered, if possible, with a sufficient layer of oiled cotton wool, which may be held in place by a light bandage. If the cotton cannot be held in place, wheat flour may be freely sprinkled over the newly oiled surface.

Second. Inflammation of the skin, with the production of blisters filled with serum, will be *caused* by a more severe burn.

Symptoms. — The skin is tense, hot, and swollen, soon becoming more or less covered with "water blisters" of varying sizes; and the pain is considerable. If the blisters get broken or their tops rubbed off, the surface underneath becomes exceedingly tender. In the more favorable cases the outer skin is slowly removed, and the part, returned to health, no scar remains, and the hair grows again. In other instances, pus and sores will be formed on the injured surface of the true skin, when some of the hair will be permanently lost and a scar will remain. The constitutional symptoms are often severe and the depression considerable.

Treatment. — If the constitutional symptoms are markedly shown, it will be because the pain is great. This should be controlled, as far as possible, by the administration of moderate doses of the tincture of opium; while, if the depression is considerable, a little whiskey or brandy may be given. For the local application nothing will be better than the raw linseed oil, already recommended, or, if the blisters are broken, carron oil, which is a mixture of linseed oil and lime-water, in equal parts, had better be used. The use of wheat flour is not desirable because, if it becomes mixed with the contents of the blisters, a dirty, irritating paste is formed, which is difficult to remove, for a proper dressing of the sore surfaces. When the blisters are large and well filled with fluid they should be opened, great care being taken not to remove their coverings in the process. If pus is formed, the parts must be thoroughly cleansed once or twice a day with the solution of lysol.

Burns of greater severity than those already described had better be put under the care of a veterinarian as soon as possible, for they are likely to become quite complicated in their necessary treatment, both constitutional and local.



1 SPINAL COLUMN AND RIBS
2 NOSTRILS
3 JAW
4 GULLET RUNNING TO STOMACH
5 TRACHEA OR WINDPIPE
6 HEART
7 LEFT LUNG
8 LIVER
9 STOMACH
10 SMALL INTESTINES
11 DESCENDING PORTION OF COLON
12 URINARY BLADDER
13 LEFT KIDNEY
14 RECTUM
15 URETER
16 TESTICLE
17 PROSTATE GLAND
18 PENIS
19 PREPUCE OR FORESKIN OF PENIS

MALE DOG

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Burns from Acids and Strong Alkalies sometimes occur as the result of accident. The *treatment* of them should be as for any burn of equal importance, *excepting*, if acid has caused the harm, the part should be freely bathed with an alkaline solution, as, saleratus one heaping tablespoonful to each quart of water. Or if the burn is from a strong alkali, as lime, the parts should be bathed with some weak acid solution, as a cupful of vinegar to each quart of water. These baths are to be given only once, and they will be productive of no good whatever unless they can be used almost immediately after the accident has taken place.

Canker of the Ear in Dogs.

Causes. — The entrance of foreign bodies into the ears, bites from other dogs, but much more frequently than either of these, the same set of causes that operate in bringing on an attack of eczema.

Symptoms. — The early approach of canker is indicated by frequent shaking of the head, or holding it to one side, or careful scratching of one or both ears, accompanied by a low, painful sounding whine. If now an examination of the inner side of the ear be made, the skin will be found red, especially down among the folds, and that some of these are swollen. If these earlier symptoms are neglected the pain will increase, the redness become more intense, the folds more swollen, and deposits of red or black thick matter will be found to have taken place in the various hollows between the folds, more especially the deeper ones and at the bottom of the canal. Should it happen that up to this time the ear had not had treatment, little sores will begin to appear upon various parts of the skin, again, more particularly the deeper ones.

Treatment. — The ear should be carefully and thoroughly examined and any collections of foreign matter removed. This should be carefully done by using a small piece of wood, like a toothpick, which has a little absorbent cotton wrapped around one end; the cotton must be changed each time that it becomes soiled. The ear having thus been cleaned *thoroughly*, the use, twice a day, of a little of a solution of the sulphate of zinc, ten grains to one ounce of water, will generally be all that is required. The ear should be cleansed once daily for as long as is necessary.

External Canker or Rodent Ulceration of the Ear.

Causes. — The disorder attacks dogs having pendulous ears, as pointers, setters, etc., and of these, more commonly those, that from the habit of shaking the head considerably, from any cause, or those whose instincts take them through underbrush and among briars where the parts may receive some small scratches, which may be followed by the ulcer.

Symptoms. — There appears at first, at the pendulent tip of the ear, a small wound, abrasion, or bruise that is thought to be of no consequence. After a little time, however, the animal commences to shake his head, flapping his ears violently; the ear swells about the little wound, which, if closely examined, will be found covered with a thin, dry, brown scale, having minute cracks upon it and being hot and somewhat painful upon pressure. After a little the scab will be removed, disclosing an indolent, ulcerated looking surface covered with a small quantity of a greenish, unhealthy looking pus. This ulcer will extend itself more or less rapidly as the dog shakes the head, until the ear is eaten through at the tip, the sore extends by its margins and shows no tendency to heal.

Treatment. — Nothing will be of avail until the dog can be made to stop the violent flapping of the ears, and this cannot be accomplished without the use of the so-called "canker cap." This cap may be made of close net or a piece of cotton cloth, which should be six or eight inches in width and sufficiently long to reach round the head and meet under the jaws. Along each side of it must be a running piece of tape and a shorter piece sewed at the center of each of the ends. By means of these the cap may be drawn tightly over the head, above the eyes, and likewise round the neck, behind the ears, so as to confine them perfectly. The cap being ready for use, the ulcer is to be thoroughly cleansed with the lysol solution, and all small pieces of the scale removed as soon as possible. The whole surface is then to be covered with a *small* quantity of powdered iodoform, the ears placed one above the other on the top of the head, and the cap adjusted. The cap must be kept on for some time after the other treatment is no longer necessary, or else the ulcer will return.

Rickets

is a constitutional disease characterized by the softening and bending of some of the bones of the body and extremities, superadded to many of those conditions that result from indigestion. There is general debility, softness of muscles, and a sluggish state of the nervous system. The malady is essentially one of early life and is seen in *foals* and *calves*, but particularly in *puppies* of all breeds, large and small.

Causes. — Anything which induces imperfect digestion of food and impaired general nutrition. Hence it is seen in calves which are not allowed to suckle their mothers; in foals when the dams are taken to work during the day and the foals allowed to suckle only morning and night or, at most, three times a day; conditions which always create a tendency to eat to over fulness of the stomach, as a result of which the milk passes through them in an ill-digested, curdy condition, and the young animal is partially starved, both by the imperfect assimilation of the food and by the weakening of the digestive powers, which is gradually brought about. In addition to this improper method of feeding, the constant breathing of impure air, living in damp, dark, or cold places, will induce rickets, and here probably will be found the reason for so many more puppies being affected with rickets after a winter rearing, than among those that have been raised in the summer and sunshine, all other conditions being equal.

Symptoms. — It will first be noticed that the young animal shows an undesirable fulness of the stomach, just after feeding, which is soon followed by diarrhœa, more quickly recognized in calves and foals than in puppies; general debility and loss of flesh, with slight but comparatively painless swelling about the joints of the limbs, especially the wrists in puppies. The change from apparent health to disease is, as a rule, so gradual that the animal is not considered to be sick enough for special treatment until, after the lapse of some little time, the bent condition of the bones of the legs is suddenly realized to exist to some considerable degree.

In foals and calves the bones from the knees to the ankle are first to give way, the curvatures being outward; thus the knees are thrown outward and the toes drawn inward. At the same time the extremities of the bones at the joints become enlarged, hot and painful, causing so much lameness that the animal merely touches the toes of the affected limbs to the ground. When the bones of the hind extremities are bent, the toes are turned outward, the hocks inward, the points of them almost touching each other; and the cannon bones bent at their middle, inward and backward.

In puppies the bones which bend soonest are those of the arm, at the lower third, giving the animal a dwarf-like appearance; he stands with his front-legs wide apart and walks with a peculiar strut, throwing the weight of his body from one leg to the other as he walks, the breast-bone, in some cases, almost touching the ground. The elbows and wrists are disproportionately large and somewhat hot and painful upon pressure. In all the animals, after a time, the breathing is quickened, the pulse becomes frequent and feeble, the appetite capricious, and the diarrhœa offensive in smell. Recovery takes place slowly at first, rapidly afterward. The earliest signs of improvement are a better condition of the excretions; the appetite improves; the flesh is firmer; growth, which has been at a standstill, proceeds rapidly; healthy bone material is actively deposited at the parts where the curvature has been the greatest; the bones become healthy; and there is left of the disorder only more or less deformity, by curvature, which will remain throughout the life of the animal.

Treatment. — Rickets is always preventable if its causes are not allowed to exist. When present, the first attention must be to regulate the digestion, under the general rules already given, and by allowing small quantities of the proper food, for young animals, at frequent intervals. The medicines to be given are iron, quinine, cod-liver oil, and bone meal, in the quantities required by the various animals, and the differing sizes and ages of the puppies. (See dose table.) The pill of citrate of iron and quinine may conveniently be given to dogs. The bone meal used should be that which is carefully prepared, ground very fine, and obtainable from the druggist only. If the dose of cod-liver oil used is too large, it will cause purgation and must be made smaller; if constipation is troublesome the dose of the oil can be increased.

Splints of very thin wood in the larger animals, or pasteboard in puppies, are often used with considerable advantage, during the beginning of treatment, if properly applied and so arranged that they do not chafe the skin. They should, of course, be put on the inner side of the curvature.

Splint

is the name given to a small bony growth generally situated upon the inner side of the front cannon bones of horses; while it may occur anywhere between the knee and the fetlock, it is usually seen about midway between these two joints.

Causes. — Anything which may cause inflammation of the covering of the bone, as a blow from the other foot, in traveling; in animals under five years of age, from concussion in trotting or galloping rapidly upon a hard road, etc.

Symptoms. — The bony enlargement is both easily seen and felt upon some portion of the parts described. Unless the splint is in close connection with the knee, or being newly formed, or recently struck, as by the other forward foot, there will be no lameness. Splint lameness is peculiar in that the horse, with it, will trot *exceedingly* lame, and walk nearly, if not quite, sound, the two exhibitions of lameness being out of all proportion to each other; besides which the further he goes the lamer he gets. Both of these symptoms *may* be shown before the enlargement appears, but if the coming splint be its cause, close examination will show heat and tenderness upon pressure, at the seat of the coming enlargement. Unless lameness is present, or the growth is in close connection with the knee joint, splint is not a cause of unsoundness.

Treatment. — When the growth is first coming, or whenever, from interfering, etc., it is hot and tender, rest the horse and apply cold water bandages frequently, until all of the heat and soreness have passed away. Afterward an attempt may be made to "harden it down" by the use of a blistering ointment made of red iodide of mercury, two drams, well mixed with one ounce of lard. A *very little* of this ointment is to be rubbed lightly over the splint, once a day, until the parts become sore, when further application of it should be stopped and the part allowed to dry; when the crust that will be formed is perfectly dry, a *very little* sweet oil or lard should be put upon it two or three times a week until it comes off. The whole process will take about three weeks. The hair should be clipped off before the ointment is used.

Diseased Conditions of Joints

It will not be possible to intelligently describe the disorders coming under this head, unless there is a fairly clear idea of the structure of joints. A joint is a union, by means of *ligaments*, of two or more bones the opposing *surfaces* of which, so shaped as to be perfectly fitted into one another, are covered by *cartilage* and enclosed within a capsular ligament, forming a closed cavity which is lined throughout by a delicate membrane that, from its function, which is the secretion of the joint-oil or *synovia*, is called the *synovial membrane*. Any one of these four tissues may be injured and become inflamed, but their liability to inflammation is in direct proportion to the amount of blood that they naturally contain, and that is in the following order: synovial membrane, bone, ligament, and cartilage.

The Causes which operate to produce diseases of the joints are very various; they may be *local*, as from blows, strains, and wounds; *constitutional*, when certain conditions which modify the vital processes in various other tissues of the body, but which are especially prone to locate in the joints, are met with, as in rheumatism, tuberculosis, etc.; or there may be a modification of one by the other, as, when a predisposition to disease of the joints is hereditary, a slight injury will induce a certain grave disorder which, in an animal without such taint, would be of no great consequence.

Bog Spavin is a soft, fluctuating swelling situated upon the inside front of the hock joint.

Causes. — A chronic synovitis, which has been due to overwork of the limb or to some slight injury of it, as strain, twist, etc., as a result of which a large amount of synovial fluid has been poured out into the cavity of the capsular ligament, so creating a dropsy of the joint, which has little, if any, tendency to become absorbed and disappear.

Symptoms. — There may be, at first, a slight lameness which, when present, is due to the cause of the synovitis; this soon passes away, with rest, and there is left no more than the swelling described. This swelling usually remains of about the same size as at first shown, throughout life; occasionally it may be induced to disappear permanently, by treatment; at other times it rarely happens that it continues to grow until it reaches an immense size, in spite of all treatment, but this is usually in horses of lowered general vitality. When bog spavin is present, without lameness, it is a blemish, not an unsoundness, because, of itself, it is not a cause of lameness and, when of moderate size, does not interfere with the animal's work.

Treatment, as has already been intimated, is not often followed by the permanent disappearance of the enlargement. When it is first shown it may be painted with pure tincture of iodine once a day until it becomes sore; or blistered with the ointment of red iodide of mercury, two drams to the ounce of lard, applied as recommended for splint. The animal must not be allowed exercise during this treatment, under which the swelling is often removed; but it will nearly always return as soon as the horse is again put to work.

Thoroughpin. — This name is given to a dropsical swelling, similar to that of bog spavin, with which it is often associated, situated just above the point of the hock, under the large tendon which comes down the back of the leg and passes over the point of the hock.

Causes. — It comes as the result of a low form of inflammation of a synovial membrane there situated, the natural sercetion of which is for the purpose of lubricating the gliding of the tendon in its sheath, at the part. The inflammation results from overwork of the tendon. It rarely causes lameness, excepting that which may be due to some little strain of the tendon, which, when present, passes off after a few days' rest, leaving a dropsical swelling which extends from side to side of the leg and is of larger or smaller size. A thoroughpin is not an unsoundness, unless the animal is going lame from it; which will be, if at all, when it first makes its appearance, and then the lameness is due to injury of the tendon.

Treatment will be the same as for bog spavin; with the same outlook as to permanent loss of the enlargement.

Capped Hock is a serous swelling of larger or smaller size situated directly upon the point of the hock, under the skin, which is very thick at the part. It is seen in cattle as well as horses.

Causes. — It is the result of a blow, or more or less constant pressure upon the part. Horses that kick the sides of the stall are very apt to have it, as well as those that meet with accidents as a result of which the parts are injured. In cattle particularly, and rarely in horses, from lying upon a hard floor in such a position as to press the points of the hock upon it.

Symptoms. — There is a larger or smaller swelling, which, when it first comes, evidently contains fluid, is hot, and tender to the touch; there may or may not be lameness, depending entirely upon the importance of the injury that has caused the enlargement.

Treatment. — Prevent any repetition of the cause by padding the sides of the stalls, if necessary. If the injury be recent and the part hot, slip an old overall leg up over the leg of the animal, tying it *lightly* around the limb just below and above the joint, thus leaving a sort of pocket around the joint. Fill this pocket with old sponge, cotton waste, or similar material, and keep it constantly wet with ice water until all heat and tenderness have passed off. If any enlargement remains, blister with the ointment of red iodide of mercury, as directed for splint, or, if preferred, paint the part daily with pure tincture of iodine until it becomes sore, then after a few days paint again, as long as necessary. The process of removing the enlargement, if it becomes at all chronic, is a slow one and not always entirely successful. The horse can be used during treatment, but great care must be taken to prevent *any* addition to the cause. It is not an unsoundness.

Curb. — By this term is meant a hard swelling which appears at a point some three or four inches below the point of the hock, directly upon the back of the leg.

Cause. — It is a strain of a ligament (calcaneo-cuboid) which serves to bind the lower extremity of "os calcis" to other small bones of the hock joint. The cause of the strain is anything which tends to pull the point of the hock too strongly forward: as rearing, pulling heavy loads up hill, slipping, as in backing, with the hind legs well under the body, jumping over high objects, etc.

Symptoms. — Upon examining the hind leg in profile it will be seen that, at the point named, there is an outward bulging varying in size from a hard, small nodule to a large, diffuse swelling, which may possibly, if the strain be a very recent one, be somewhat puffy, hot, and tender to the touch. If lameness be present, which depends rather upon the age of the curb than its size, it is characterized by difficulty in straightening the leg backward.

Treatment. — Rest the horse, put on a shoe having no toe calk, and with heel calks about one and one-quarter inches long, measuring from the foot surface of the shoe. When the injury is recent, or the swelling at all puffy and hot, it should be cooled as recommended for capped hock. After the inflammation has been thus removed the parts may be either blistered with the red iodide of mercury, as in splint, or fired; which operation will necessitate the services of a veterinarian. In some of the less important cases, or if the horse can be spared from work for some time, the blister will give good results. In very severe curb deep line firing is the only measure to be thoroughly relied upon. When put to work these recovered horses should be shod with fairly high heel calks, without any toe, for some little time.

If the injury to the hock be entirely comprehended in the curb, there is no doubt that the animal may be restored to soundness, so far as lameness goes, although the enlargement will, in all likelihood, remain. Older horses, those in which the bones have become thoroughly hardened, permanently recover much more quickly than do those under five years of age; among which there is a strong tendency to recurrence of the lameness, upon work, until the bones have age enough to harden them, that is, until they are seven years old. An old, hard curb, if the horse is not going lame, is a bad blemish, but not an unsoundness.

Bone Spavin is a disease of the small bones of the hock, through which a growth of new bony material, of larger or smaller size, after the nature of a splint, is deposited on the face of the joint, on its inner side, a little more than half-way down between the hinge of the joint and the head of the cannon bone, which last may also be involved. The term refers to the enlargement only. When a horse is lame in this joint, and no bony enlargement is discoverable, he is said to be suffering from hock-joint lameness. Some horses show a bony enlargement at this point in one or both legs, and no lameness exists. Such animals are said to have coarse hocks, and while one is always expecting that such an animal will commence to go lame at almost any time, many of them go through a life of work without ever showing lameness or limited action there.

Causes are predisposing and exciting. A predisposition to spavin may be hereditary or due to some peculiarity in the conformation of the leg, or joint, as in a "sickle-hocked" horse, etc.; there is no doubt as to the hereditary tendency

The exciting causes are anything that may set up an inflammation of the synovial membrane, as strains or local injuries; or which may give rise to disease of the bones or its covering, the periosteum, as concussion, that is, too much fast work at either galloping or running, or anything that overworks the joint.

Symptoms. — There is a hard enlargement upon the seat of spavin, which may be so large as to be easily seen from quite a little distance, when standing directly behind the horse, or so small as to need the most careful examination by an expert for its detection. The lameness is always shown when the unexercised horse begins to trot, and is somewhat peculiar in that it generally passes entirely away after the animal has been driven a distance varying from a few rods to a mile or two. In some instances the lameness is not lost, or it may even be increased, by exercise; this is when the cartilages of the small bones, the action of which is simply to glide upon one another, have become diseased, allowing their sore surfaces to rub together. The method of using the limb is peculiar in that the spavined horse invariably starts off and goes upon his toe, so long as the lameness lasts; and if the shoe of one of these animals is examined it will be seen that its toe is nearly worn out, while its heels have been but little worn, if the shoe has been upon the foot for some time and the horse has been regularly worked. Another peculiarity of the lameness is that when the leg is lifted from the ground the hock moves with a *little* spasmodic jerk that remotely suggests a string-halt action. In some cases the pain caused by work is so great that the animal loses flesh rapidly and doesn't eat well.

Treatment. — The only reliable method of cure is by deep point firing and absolute rest for from eight to twelve weeks. Occasionally a severe blistering, with the Spanish fly ointment, or some liquid blister, many of which are sold under the name of "spavin cure," have been known to bring about the desired result; but they are not to be relied upon. There are one or two good operations that are practised by veterinaries, the description of which will not be necessary in this place.

Young animals recover much more often than older ones; but in a large practice the percentages of recovery amount to about three quarters of all the cases *fired,* taking them as they come, favorable and unfavorable, together.

All spavined horses, while at work, should have the toes well cut back, the shoe fairly long in the heel, with the heel calks as long as can safely be used.

Ringbone, often called Clingfast, is another one of the disorders, as a result of which deposits of new bone are made round about the diseased parts, which are one or the other of the pastern bones, on either the front or hind legs, more commonly, perhaps, on the hind The term is properly applied to any such enlargement, whether it forms a "ring around the bone" or consists simply in a small prominence upon one part of the bone only. If the enlargement is above the middle of *os suffraginis* (see skeleton) it is described as a *false* ringbone and is of the nature of "splint"; this is not an unsoundness, if the animal trots free from lameness. In true ringbone the bony deposits involve joints of large movement, because of which the disorder is generally incurable.

Causes. — These are predisposing and exciting. Among the predisposing causes are hereditary taint, long sloping pasterns, and rheumatism. That breeding from ringboned parents has long been looked upon as a fruitful source of ringbone in the young there is no possible doubt. The exciting causes may be said to consist in any acts or efforts of speed or strength that will produce an over-concussion to the pastern bones; strains of the parts, injuries as from blows, pricks with a fork-tine, or wounds of any sort that can give rise to inflammation of the bones or synovial membranes.

Symptoms. — Lameness occasionally precedes any recognizable deposits of new bone material; and the lameness is peculiar in that, if in a fore limb, the horse puts his heel to the ground first; if in a hind one the toe is the first to touch the ground. Later the pastern, just above the coronet, will be seen to be larger than its fellow, with or without heat or tenderness to the touch; and if the animal is trotted he will show more or less lameness, evidently referable to the region of the foot. Not unfrequently a horse is seen with a hard enlargement upon the seat of ringbone, that will show no lameness. Notwithstanding that the writer has known several of these instances in which the animals have continued to go sound for a long time, his practice has always been to reject as unsound any horse having a bony enlargement upon the seat of ringbone and, on the whole, the practise has been proved to be good.

Treatment. — Many operations, some of them, as stripping the sole, of a most cruel and useless nature, have been from time to time practised for the cure of ringbone, without success. The fact is that the disorder is generally incurable; occasionally, repeated blisterings with the red iodide of mercury, in young animals, or repeated deep point firing, with Spanish fly blisters, in the older ones, with long rest, will be followed by loss of the lameness and ability to work sound. So, taken all in all, it will probably be as well to keep at work a horse that is no more than moderately lame from ringbone; his chances of recovery are certainly none the less. In shoeing such horses for work, those that put the heel to the ground first should have a thin, wide-heeled bar shoe put upon the foot; those that go upon the toes should have high heel calks and no toe calk upon the shoes.

Diseases of the Foot.

Disease of the Navicular Joint, Coffin Joint Lameness, Grogginess, Chest Founder, etc., are names given to a disorder of the navicular joint, which is made up between the navicular bone and the tendon which picks up the heel of the foot; the cartilages and synovial membranes being situated at points where this bone is against the pedal bone, but much more extensively on the surface of it, over which the tendon slides, where there is an unusually large joint oil apparatus. It is the most commonly seen disease of the fore feet in horses that are used for driving or running purposes, and one of the most incurable of them, when firmly seated.

Causes. — The trouble always commences as an inflammation of the synovial membrane between the bone and the tendon; if this is unrelieved, and it is the only stage of the disorder which it is possible to cure, the later effects of synovitis follow in more or less rapid succession; the bone is roughened at its edges, the cartilage is more or less destroyed, the center of the bone begins to decay, and the whole bone may finally be broken across through its short middle line. If the roughness of the edges, above spoken of, becomes sufficiently developed, the tendon, in gliding over it, is roughened and an inflammation is set up which finally results in an adhesion of the tendon to the bone.

The disorder is rarely or never met with in horses having large, round feet with low heels, but attacks those of the opposite formation, that is, with high heels and a good length from toe to heel. It is common knowledge that the low-heeled foot carries with it a large frog and never easily becomes hard; just as well known is the fact that the frog in the high-heeled foot tends to grow small, the sole to fill up with a quantity of hard, dry horn, and the walls at the heels so dry and hard that they actually contract upon themselves until the foot looks, and is, much more narrow than it should be across the heels and quarters. It will easily be understood, then, that an animal with feet as hard as a stone, in which the horn has lost all of its elasticity, both in the wall and sole, and in which the frog has become more or less shriveled and hard, if trotted upon a hard road, will receive much more concussion to the foot than if that member were in its normal elastic condition. And when it is realized how delicate and susceptible to injury synovial membranes are, there should be no doubt that the one cause of navicular disease, aside from absolute wounds to the parts, as from nail prick, is concussion; received under the conditions pointed out and communicated to the synovial membrane. There is no doubt whatever that colts bred from parents, especially mares, having this trouble, are strongly predisposed to contract it upon slight application of the general cause.

Symptoms. — Lameness may be the first thing to attract attention, although, at times, an earlier sign will be a more or less constant "pointing" of the foot while standing in the stall or elsewhere, the horse, however, doing his work "sound." Lameness may make its appearance suddenly, in which instances it is often intense from the first; as, a horse may leave the stable, for work, in his usual state of soundness but, while out, drop suddenly lame. At the moment it is thought that he has trodden upon, or picked up, a stone; upon examination, however, no stone is found, nor is there any apparent cause of lameness in either the foot or the leg; after a little further time he is found to be suffering from this lameness.

More generally, however, the lameness is gradual in its development, insidious and stealthy even. At first the owner imagines that his horse is going lame; while driving him he "wonders" if he is not now and then taking a lame step, or whether it is his fancy that he does so; the leg and foot are examined, nothing is found to be wrong, and no more is thought of the matter, especially as, upon the next slight drive, the animal shows no lameness whatever. Soon, a longer or more speedy drive is taken, the suspected lameness returns and asssumes more of the form of reality and does not pass off so quickly. If, even now, the animal has a few days' rest the lameness is not unlikely to be lost a second time or, at all events, it is so slight that little or no heed is taken of the "favoring" that remains. In this way days or weeks are allowed to pass before the obstinate character of the trouble is realized.

The foot may or may not feel hot to the touch; the hoof will be hard, and if sharply tapped with a hammer, on the sole, under the joint, some evidences of pain may be discovered. Further than this, the examination must be in skilled hands; it consists of exclusion of other causes of lameness, by further examination of the foot; the injection of cocaine to numb the foot, and a trot at the halter to see whether or not the lameness still remains.

After an animal has become chronically lame in both feet, from this trouble, the legs, in trotting, are pushed straight out without very much bending of the knee or action of the muscles in the region of the shoulders and arms, so that the feet may come to the ground as lightly as possible and save pain. A horse in this condition scarcely ever "nods," as from lameness, but with the action described, and the soreness about equal in both feet, he goes along pretty well for a longer or shorter time, sometimes for years. It is this limited action of the muscles of the shoulders and arms that has given rise to the terms *chest founder* and *sweeny* of the shoulder, occasionally heard; the fact being that because of the lessened use of the muscles an atrophy or shrinking in size of them takes place, which makes the breast look as if it were sunken in; and the shoulders thin, flat, and drawn.

Treatment. — There is no hope of full recovery unless the case is put under treatment for synovitis when the trouble is first shown. The shoes are to be removed, the sole of the foot, including the bars, pared out, until the remaining horn is quite flexible under pressure from the thumbs, the heels well opened; and the animal allowed to stand, with both feet in a tub of ice water, up to the fetlock joints. After this "soaking" has been continued, during the daytime, for five or six days, the coronets are to be thoroughly blistered with Spanish fly and the horse allowed absolute rest in a stall or box for fully six weeks. The horse will go sound after the soaking, but if he is allowed to go to work without taking the long rest prescribed, the synovitis will return.

There is but one surgical operation that should be allowed upon the feet of these horses, and that is the one that is commonly known as "nerving," in which a section of the sensory nerve supplying the foot is cut out; two cuts for each foot are required. This operation may well be likened, in its results, to that of "killing the nerve" in a tooth, commonly practised by dentists; the disease is not cured, but remains in the foot and progresses, but with, perhaps, less rapidity. There is no loss of action, because the nerve that is destroyed is one purely of sensation; the nerves governing the action of the muscles, which are all situated above the knee, are in no wise interfered with. The writer has known many instances in which comparatively worthless horses have been made, in this way, to go perfectly sound for years. On the other hand it occasionally happens that a form of degeneration follows the operation, in which cases the hoof is sloughed off and the animal has to be killed; there is no pain accompanying this loss of the hoof because the foot has already been made "numb" by the removal of the nerve. The operation should not be attempted until the foot and leg, up to the knee, have been made thoroughly cool by the application of a cold-water bath to the feet and cold, wet bandages to the legs, for two or three days immediately preceding it.

Side Bone. — This term is used to indicate the presence of a hard, bony bunch, situated at the extreme heel of the foot, just above the hoof, at the point where it begins to make the turn toward the frog.

Causes. — The bunches appear because the cartilaginous wings of the pedal bone, which come up to give elasticity to this part of the foot, have been attacked by an inflammation which has changed them into bone. They are generally, but not always, found in low-heeled feet; and the cause of the inflammation is usually due to concussion coming through heavy, high heel-calks; they may also be the result of blows or wounds to the part.

Symptoms. — Lameness may or may not be present; the bunch is easily felt, and can oftentimes be seen, when the horse stands with the feet firmly placed on the ground. If the foot is lifted and the side bone taken between the finger and thumb it will be found to be entirely rigid and of larger or smaller size. There may be but one on a foot, more commonly there are two; all the feet may be affected, but it is much more frequently met with in the front ones. When lame, the horse puts his toe to the ground first, which gives him a short and stilty action.

There has been considerable discussion as to whether or not horses having side-bone, and going sound, *were* sound. It may well be determined that they are all *unsound*, but horses that are to be used at a walking pace only, will often keep free from lameness and do good serviceable work.

Treatment. — Rest; ice water swabs around the coronets for three or four days, to be followed by a good Spanish fly blister, and the rest continued for three or four weeks. The feet are to be shod with a wide webbed bar shoe which is no thicker at the heels than at the toe. If calks are needed they may be welded onto the sides and toe, leaving the heels under the seat of the trouble, uncalked. In horses to be used for driving or any fast work, there is no way in which the lameness can be permanently removed.

Sand-Crack or Toe-Crack. — This term is used to describe a split in the horn of the hoof of the hind feet, in by far the greater number of instances; it is very seldom seen in the front ones.

Causes. — The usual victim of sand-crack is the heavy work horse, although it is not confined to them. Animals with short, upright pasterns, with clubby, prominent hoofs, are considered to be predisposed to the accident; which is caused by the persistent use of heavy toe calks upon the shoes.

Symptoms. — There is a crack of the hoof directly at the middle of the toe; it may extend from the hair to the shoe, or only for a short distance from the shoe upward. It generally, when extending for the entire length, penetrates the whole thickness of the horn; the shorter cracks are not as likely to do so. When extending through the horn to the soft structures under it, the constant opening and closing of the crack, as the horse throws his weight upon the foot and then lifts it from the ground, occasionally pinches them at a point just below the coronet, causing a sore which sometimes discharges blood and pus in very small quantities, and always produces great lameness, the seat of which can easily be found by pressing the coronet at the top of the crack. Such an animal, in walking, will first put the heel to the ground.

Treatment. — If there is no lameness and it is desired to get rid of the crack, the shoes should be replaced by those having side calks instead of a toe calk; next a cut must be made, with a sharp drawing knife, parallel to and just below the coronet, extending for about three quarters of an inch on each side of the crack; from each end of this cut another is to be made in a line downward, which will meet the crack at about one and one-half inches below the coronet, thus cutting a triangle in the horn. All of the hoof between these cuts is to be carefully removed down to the soft tissues below it, leaving all of the edges and corners square and good.

If lameness with more or less festering of the soft parts is present, the same operation is to be made through the hoof and the sore poulticed for a day or two with flaxseed or oil meal; when all discharges have ceased, a small piece of oakum, saturated with oil of cade, should be put on and held in place by a bandage, until new solid horn begins to form on the surface at the bottom of the part cut away; this dressing is to be done once a day. The horse should be allowed to stand in the stall until the new surface horn is seen to be well started down from the coronet, when he may be shod, as directed, and put to rather slow work, at first.

Quarter-Crack. — In this the condition of affairs is much the same as in sand-crack, excepting for its situation upon the hoof, which is somewhat back of midway between the toe and the heel, at what is called the "quarter" of the foot.

Causes. — There is no doubt that this crack occurs more frequently in hoofs which are disposed to easily become dry, hard, and brittle, especially those having thin, shelly walls; and in which the horn-secreting structures are in a more or less state of chronic inflammation, with a tendency to contraction at the heels. The crack may also follow a slight wound of the coronet. Shoes that are set so that they do not press evenly upon the wall of the hoofs from the quarters to the heels, that, as the blacksmiths say, have a "spring" at the heel, give rise to the crack in brittle, weak hoofs.

Symptoms. — The crack generally appears suddenly, although, from its situation, which is generally upon the inside quarter, it may not be noticed for some time, unless it happens to give rise to lameness. It generally first takes place through the horn at the coronet, and from there extends, more or less quickly, in a slanting direction forward, down to the shoe. The crack may, and not unusually does, extend through the thickness of the horn, and produces soreness of the sensitive tissues beneath it, with the same results as already described in toe-crack.

Treatment. — In some slight cases the longitudinal cut made across the upper end of the crack will be all that is required. The other cases must be treated as already described, at length, for toe-crack.

False Quarter. — The horny outer wall or crust or enamel of the hoof, being secreted from the coronary substance, it naturally follows that when a part of this substance is destroyed, as by direct injury, the part of the wall below this destroyed portion is no longer supplied with horn from above; a deficiency which causes a permanent chasm or fissure, of larger or smaller size, in the wall, to which this name has been given.

Causes. — Anything which happens to absolutely destroy the integrity of the coronary substance, as a wound inflicted by the heel calk of the opposite shoe; the toe of one of the hind shoes; falls when there is considerable struggling while down, as when a horse is cast in his stall, etc.

Symptoms. — It may occur at any part of the coronet, but is more commonly found at the inside quarter or a little behind that, toward the heel. It differs materially from quarter-crack in appearance. There is the wound or scar with loss of substance at the top; the fissure is much wider at its base, and contains a very soft horn at its bottom, which is secreted by the soft tissues lying immediately beneath.

Treatment. — There is no cure. If lameness is present a three-quarter shoe must be applied to the foot and worn constantly; a bar shoe will not answer the purpose in severe cases. To shoe properly, a full shoe with a moderately wide web, and of good substance from the ground to the hoof surfaces, should be made and fitted; after this is done the heel of the shoe is to be cut off at a point which will leave the entire part of the hoof, under the fissure, and from there to the heel, entirely unshod. There need be no fear of bad results to the unshod portion of the hoof; the writer has known a heavy steam fire-engine horse, treated in this way, to do his galloping work on stone pavements for years with entire satisfaction, while without it he was so lame as to be useless, in his peculiar work. False-quarter is an unsoundness.

Corn. — This term is undoubtedly borrowed from human practice, and is unfortunate in that it may cause a mistaken idea as to the real nature of the disorder. There is no connection whatever in the nature of the two. In horses, corn is simply a bruise of the sensitive sole of the foot, at the extreme angle of the heel, generally on the inner side, rarely upon the outer, of a front foot, as a result of which some little blood oozes into the pores of the horn, staining them red at the point; or, the bruise being long continued or very severe, pus may form in the part, in which case it is called a suppurating corn.

Causes. — Corns are found in all kinds of feet, but perhaps the large round ones, with low heels and thin walls, are more especially subject to them. The trouble arises from pressure by the shoe upon the *sole*, at its extreme end at the heel. It is not always, necessarily, due to bad shoeing. The wall, at the part, may be broken or worn so that it is not sufficiently strong to hold the shoe away from the sole, as it should do. The old horn may not have been removed from the sole at the point, and when this happens the sole is sure to get pressure from the shoe; or the shoe may be so badly made and put on as to cause great pressure upon the heels. Contracted heels will sometimes cause a considerable and sufficient pressure upon the soft structure within to bruise them badly and produce "corn."

Symptoms will vary, depending upon the condition of the corn. Lameness is commonly the first thing that leads to the discovery of the injury; this may come on slowly and increase little by little; or suddenly and be of considerable intensity. In slight corn the horse starts out sound and, after a little, goes lamer and lamer; or he may begin lame and grow better as he travels; or he may be so lame that he "goes on three legs," as in the case of a suppurating corn. There is nothing distinctive about the lameness excepting that in many instances, while the horse is *at a walk*, it can be seen that he treads upon the outside heel first.

When the shoe is removed, and the sole at the heel has been pared away a little, the red stain will be seen; this may amount to a broad patch or only to a small spot; it may be of a brown or even of an almost black color, when it is old; the rule being that the brighter red it is the more recent has been the bruise. Rarely there may be no more than a yellow spot, this is because the bruise has been severe enough to cause an outpour of serum, without having ruptured a blood-vessel, and is more frequently seen in "contracted" feet. It may happen that the horse, although showing lameness, has been kept at work and the bruising considerably added to, until he rather suddenly becomes so lame that he can hardly put his foot to the ground. When this is the case, upon removing the shoe it will be found that the slightest tap from a hammer, or pressure with the pincers, upon the part, will show very great pain; and further examination, by cutting through the horn, will be followed by a small evacuation of pus, which is generally of blackish color and has a bad smell; this condition is called a suppurating corn. If a suppurating corn is not discovered or properly treated, after a time of considerable lameness a little soft swelling will appear in the skin just above the coronet, which, being opened, will discharge more or less matter; and it will afterward be found that this opening runs down to the seat of corn. This is the so-called "gravel" in the foot; gravel cannot enter through the horny sole; work upward and come out above the coronet.

Treatment. — The corn must be carefully pared out to whatever extent is necessary. If there is much lameness the horse will have to be rested for a while, during which the foot should be poulticed with bran and water until the soreness has disappeared; the poultices should be kept wet and changed twice daily. After this a shoe can be put upon the foot, the only necessity being that the web is wide enough to cover over the seat of corn, and that it is "concaved," on its foot surface, enough to prevent any further possibility of the undesirable pressure. Suppurating corns may be treated in the same way, using oil meal, instead of bran, for the poultice. In the cases which have opened through, the services of a veterinarian had better be obtained.

Thrush is the result of an inflammation of the outer or secreting surface of the sensitive frog, which lies immediately below the horny frog.

Causes. — The maintained application of moisture to the horny frog, in any form, as from standing too long in damp manure, mud, poultices, etc., or it perhaps arises from "contracted" feet; or those in which navicular disease exists; or when the horny frog becomes hard, dry, and shriveled.

Symptoms. — There is an inflammation of the sensitive frog, as a result of which a more or less dark colored, bad smelling, thick, tarry fluid is discharged from about the horny frog, at first, generally, from its cleft, or possibly at its sides, deep down next to the sole, toward the heels. Unless the thrush is properly attended to it gradually extends so that it may even effect the whole of the sensitive frog; as a result of which the entire horny frog may become separated from the sensitive structure immediately beneath; lameness may or may not be present in the slight cases, it always accompanies the severe ones, and is evidently referable to the foot. It occasionally happens, in summer particularly, that the result of the inflammation will be shown in the form of a little, rather pale, "proud flesh" in the cleft and about the bulbs of the frog; the part having become nearly, if not quite, bare of horn, and when first discovered there is often found to be a goodly supply of maggots in possession.

Treatment. — Cut away all horn from the diseased surface of the sensitive frog, and apply to it dry calomel once or twice a day until cured. In some instances the treatment will leave the parts very hard and the horse going lame. This condition will be quickly relieved by a poultice left on over night.

Seedy Toe. — The term is used to describe a condition of the foot in which there has been a separation of the wall of the hoof from the sensitive and secreting surfaces immediately beneath it, at the toe.

Causes. — Generally, a large, heavy toe clip, together with a large toe calk upon the shoe. It may also be the result of any cause which will set up an inflammation in the soft structures of the part.

Symptoms. — The front feet are generally, but not always, the ones to be affected. It is first found that the horn of the sole at the extreme toe is so soft and powdery that it easily crumbles away from slight scraping, as with the back of the thumb nail. If this horn is removed a cavity of more or less extent will be found lying under the wall of the toe, and this part, in cases of long standing, will be seen to have sunken in and extended forward at a less angle than that of the healthy toe. Lameness is not usually present until this "sinking in" of the wall has become well established.

Treatment. — First, carefully ascertain the extent of the condition with a probe of some sort. Second, cut away all undermined horn and clean all diseased surfaces. If so much of the wall has to be removed as to weaken the hoof to any considerable extent, let the blacksmith place and clinch a horseshoe nail in the wall just above the top of the cut, as he would to keep a quarter-crack from opening and closing. This should prevent any upward splitting of the wall. Dress the parts, once daily, with the oil of cade until all seems clean and good. After this operation has been done in horses going lame from the trouble, the coronet had better be blistered lightly with Spanish fly to hasten the growth of the wall downward. The shoe to be used afterward, until the wall has completely grown down, should be a wide-webbed flat bar, without calks, if possible; or otherwise, small calks welded upon the sides and heels of the shoe. It will generally be best to have a tar and oakum dressing, with a full leather, put on under the shoe.

Quittor is the term used to describe a condition in which there exists either a swelling or sore upon the coronet which, upon being examined, is found to contain one or more small "pipes" (sinuses) which lead down under the coronary band and lateral cartilages into the structure of the foot itself.

Causes. — Pricks in shoeing, suppurating corns, tread wounds of the coronet, badly treated bruises upon the coronet, or any other circumstance which may set up a suppurating process within the hoof and coronary substance.

Symptoms. — The lameness may or may not be considerable; the animal is frequently unable to touch the foot to the ground; the bunch or sore is present, as described.

Treatment. — There is absolutely nothing that will cure this condition excepting a skilled surgical operation. It will therefore be entirely useless to spend money and time in an endeavor to bring about a cure by the use of outside applications. If the horse is able to work without too much pain, it will be better to keep him at it, moderately, when the operation cannot be done. In some of these instances the parts work sound after a considerable period.

Founder — Laminitis. — The horny hoof is joined and held fast to the soft, sensitive structures beneath, by a great number of small leaf-like objects, running the full length of the wall, at the various parts of the hoof, from the coronet downward. These objects are called *laminœ*, and there are two sets of them, the horny or insensitive, found lining the wall of the hoof throughout, and the live or sensitive, composed of soft tissues which completely cover the entire surface with which the wall comes into contact. The sensitive laminæ are richly supplied with blood and are very active in their function, which is to secrete new horn in sufficiently large quantities to keep the horny laminæ and the greater part of the thickness of the wall, in good order. The hoof is strongly held in place by the close interleafing of the two sets of laminæ. The healthy condition of the inner and softer horn, of the entire wall, depends upon the healthy condition of the sensitive laminæ. When these become inflamed, as they frequently do in horses and to some extent in oxen and sheep, the disease is called *laminitis* or *founder*. When this inflammation sets up the same processes are followed as when that attacks any other soft tissue which is richly supplied with blood, namely, the vessels become congested, and an outpour of serum takes place, through their walls, into surrounding parts, which, if soft, thus become swollen. But it happens that in this instance the surrounding parts, the hoof, is so strong and unyielding that no swelling can take place. The result of this is that the animal suffers great pain, in the first place, and, unless the inflammatory process is cut short, the tendency to swell is so great that the *sole* and pedal bone of the foot, toward the toe particularly, is pressed down until the sole becomes a bulging convex surface, through which the toe of *os pedis* (see skeleton) is sometimes forced; at the same time the secreting power of the sensitive laminæ is lost to a greater or less extent, and the condition becomes chronic, with permanent alteration of structure.

Causes. — From drinking too much cold water or standing too long in a draft of cold air, when overheated; overfeeding with oats or meal; overwork, especially upon hard roads; long sea voyages, especially when the ship rolls heavily; enforced standing upon one foot while its mate is unable to bear any of the weight, as, when one of the feet or legs has been seriously injured the other foot, hind or fore as the case may be, suddenly becomes foundered from overwork of it, in standing continuously, and taking the whole weight of that extremity of the body.

Symptoms. — When the fore-feet are diseased, as the animal stands in his stall the hind legs are placed well forward, in order to take the weight from the front feet as much as possible, and he sways backward so that the weight that is on the front feet will be held, as fully as may be, upon the heels. If an attempt is made to back the horse out of the stall, he resists it and the movement is made with great difficulty. When the hind feet alone are attacked the animal stands with all four feet together, upon the heels of the hind ones, while he lifts spasmodically one after the other.

When all four feet are in trouble the standing position is nearer to that which is shown when disorder is in the front feet alone, but more pain and uneasiness is expressed. The pulse is full, strong, and frequent, showing sixty, seventy, or eighty beats a minute. The breathing, if he is standing, is much hastened, accompanied by a blowing noise, and the nostrils are distended. The temperature is raised to from one hundred and three to one hundred and five; patchy sweats cover the body; the expression is anxious and he may or may not eat while standing. The feet feel hot, the arteries in the leg, just above, throb, and if the foot is tapped, as with a hammer, a sharp indication of pain is expressed. In the severer cases the animal stands groaning and sweating, the picture of pain; when an attempt is made to move him he steps spasmodically two or three times and then lies down. After getting down and remaining so for a time, the greater expressions of pain gradually pass away.

Treatment. — It is very much to be desired that no time be lost before treatment is commenced and while the condition is in its congestive stage, from which the animal will generally make a complete recovery; while, if the inflammatory stage has been reached, the case will probably never fully recover, but will become chronic, with the malformation already described.

It is always best to get the horse out of the stall; give him a good deep straw bed, and induce him to lie down, which can generally be done by holding up one of the front feet; when down he should be turned from side to side occasionally. The shoes should be removed, if possible, and the diseased feet put immediately into large poultices, coming well up over the coronet, made with bran and ice broken into small lumps, to which a little salt may be added in the bad cases; these poultices *must* be kept in place and renewed as often as the ice melts, night and day, for from twenty-four to forty-eight hours or until the pain is considerably relieved, when bran and cold water will be sufficient and may be continued for a few days longer. Tincture of aconite root should be given at once, in doses of twenty-five drops in two ounces of cold water, and continued until six doses have been given, or until the pulse becomes less full and frequent. Thirst will be present; the drinking water should be given in a few swallows at a time as often as each twenty minutes at first; each pailful of water should have one-quarter ounce of saltpeter dissolved in it, until one ounce has been taken during each twenty-four hours. The food had better consist only of hay and wet bran, until the fever is entirely gone. The animal will eat while lying down, if he will not do so while standing. As soon as he is able to stand, without especial pain, the animal should be walked for a short distance, at first, which distance should be increased little by little as the condition improves. The first shoes should be those having a wide web and "bars," without any calks whatever. Do not on any account allow the animal to be bled at the toes.

If the chronic condition follows, the horse may be made useful by proper shoeing. The shoes, in these instances, are to be the wide webbed bars, but a much wider and heavier shoe must be made and fully concaved, on its foot surface, from the outer edge of the web inward; so that when nailed onto the foot the sore place will not only be covered by the iron, but leave quite a little space between the shoe and the horn of the sole above; this will not only protect the sore place from pressure, but will defend it from being hurt by stones, etc., upon the road. Such a shoe may have two calks welded on at each side of the toe and at each heel, four calks in all upon each shoe.

Shoeing.

There is no subject in the whole list of measures that may be taken to prevent disease which merits a more constant and careful attention than that of the preparation of the horse's foot for the shoe; the right form of that piece of iron for the individual foot; and its proper application to the part. The term "taken to prevent," just used, means something, for it is quite within the facts to say that the larger proportion of the lameness, existing in horses that have to work for a living upon the roads and streets, is, directly or indirectly, due to the fact that they must wear these metal fenders upon their feet in order to be able to do the work which man demands of them.

And it is quite as true to say that the evil arising from this necessity may be very much lessened by the application of a quick intelligence and drilled thought to the best forms of shoes to use for certain sound, as well as for certain unsound feet, under the various circumstances in which the animals are to be worked. Of course it would be absurd to say that such shoes as the draft horse *must* wear should never be put onto the feet of an animal that is about to run a steeplechase; that is something that everybody realizes; but there are many grades, between this extreme instance of wrong shoeing and proper shoeing, that are not so glaringly wrong as to prevent them from being commonly continued in daily practice, the results of which are scarcely less disastrous, if they are not more so, than they would be in the above mentioned extreme instance.

In the first place the great differences existing in the form, quickness, and method of growth in the various sound feet must be appreciated and accepted, and that, therefore, *no* one form of shoe, or method of application of it, as to preparation of the hoof, etc., can be devised that will answer equally well or even be at all adequate for all horses. And just herein lie the reasons for the widely separated opinions found existing among so many horsemen regarding the value to be placed upon the so-called various "systems" of horseshoeing; one who has had experience with the narrow, high-heeled feet, and has applied to them some certain brand of machine-made shoes having narrow webs, has had great, and *he* thinks remarkable, success. He recommends its use to another, who first tries it, as may happen, upon an animal which has a foot that is wider than it is long; he has with it remarkable *un*success; the consequence is that the first man praises, the second *condemns*, the shoe and the method, whereas it really merits one as little as the other; the fact being that thin, narrow-webbed shoes are good for some and bad for other feet; the result has been *purely* the outcome of unrecognized natural existing circumstances — luck; this should never be a factor to be trusted to in horseshoeing.

Feet that are naturally weak in certain places, from their conformation, should be shod so that the weakness may be strengthened all possible; those that are naturally strong and overgrown at certain other places should be checked in their growth by proper paring, and covered lightly with iron at the point.

There is no one rule or shoe that will be properly applied to all sound feet; the tendency to overgrowth, in some, must be checked by a proper use of the drawing knife; the weakness of growth, in others, must be constantly stimulated and saved by all means known to the horseshoer. On no account should the drawing knife be used upon them.

Shoes having a wide web at the toe, with a narrow one at the quarters and heel, may be used in the strong, high-heeled feet, where it is desirable to give the frog a large share of work. Other feet, those having strong toes, but low, weak heels, the walls of the parts coming very slantingly downward and forward, from the coronets, the frogs being large and spongy, must have a shoe that is both wide in the web and longer and wider than the feet are at the heels. Between these two extremes the shoe should be so fashioned as to meet the individual requirement.

Bar shoes should never be used except upon some unsound feet or in the presence of lameness due to some other causes; and then with some caution, as they are capable of producing considerable injury.

All horses' feet will be the better for being kept constantly shod with a tar and oakum dressing and a leather, both summer and winter.

Calks are necessary evils and should not be used unless positively necessary to give the draft animal a good hold upon the ground; to lift the soles of the feet up from the ground, when the roads are full of small stones; or to keep horses from slipping.

Parasitic Diseases.

All of the animals may be more or less infested by vermin, some of which live upon the skin while others infest the stomach and intestines. These are respectively known as external and internal parasites.

External Parasites.

Fleas found on Horses, Cattle, and Dogs.
Lice found on Horses, Cattle, Sheep, and Dogs.
Ticks found on Horses, Cattle, Sheep, and Dogs.
Grubs found on Horses and Cattle.
Mange found on Horses and Dogs.
Scab in Sheep.
The Fly. Maggots in Sheep.

Fleas. — This pest is so well known that it will need no description as to general appearance; there are several varieties of them, all of which have much the same characteristics.

Dog, cat, and man fleas, when very abundant, will attack *horses and cattle*, causing much itching and small swellings of the skin; they may be discovered by careful examination.

Treatment. — In horses and cattle: Sponge the whole skin with a mixture of one part of pure carbolic acid to fifty parts of water.

In dogs, the Persian insect powder should be thoroughly rubbed into the hair, and allowed to remain upon the animal for from twenty minutes to half an hour, during which time he must be kept from lapping himself. This is to be immediately followed by a good thorough bath of soap and warm water.

Lice, as found upon animals, are of two varieties. One is furnished with an apparatus for piercing the skin and sucking the blood, upon which he lives; the other has strong jaws and simply bites the skin, feeding upon its insensitive outer covering and the hair. Both of these are found upon horses, cattle, and dogs; the last alone, upon sheep. In size lice are from about one sixteenth to one eighth of an inch long, roundish and flattish in shape and of a dirty white color. It is not possible to distinguish the various extremities excepting by the use of a moderately strong magnifying glass, nor is it necessary to do so for the purpose of getting rid of them.

Symptoms.—In *horses* and *cattle,* loss of flesh and hair, together with the itching condition shown, should lead to a suspicion of their presence, which a close examination will confirm, if lice are present.

In Sheep, the wool becomes dry, the body itches and is rubbed against any convenient object; the wool is torn out, he nibbles at his flanks, and scratches at his elbows with the hind feet. Search should be made for the parasite on the inner parts of the thigh and on the sides of the neck. In *dogs,* there is considerable irritation of the skin, and restlessness. When this is due to the presence of lice, a careful examination of the head, neck, flanks, and root of tail should not fail to find them.

Treatment. — Lice can be killed in horses, cattle, and dogs, by rubbing the animal with the sulphur lotion. (See prescriptions.) The application should be repeated within a week to ten days in order that all lice which have been hatched, since the first treatment, from the remaining nits, which cannot be safely destroyed, may be killed.

Sheep must be thoroughly dipped in a sulphur bath.

Ticks. — Wood ticks attack *horses, cattle, sheep,* and *dogs,* and are commonly seen in various, more or less uncultivated places; they live upon bushes and from them are gathered as the animal passes through the brush. When the tick has gained lodgment he commences to bore through the skin; this done, he fills himself with blood and drops to the ground.

Symptoms. — Great irritation, uneasiness with scratching or rubbing. Examination will easily reveal the presence of the parasite, if he is there. If the tick is pulled out before he is full of blood and ready to come, the head and a part of the body will be left in the skin, causing a local point of irritation, with a small sore.

Treatment. — Either cover the tick with some heavy oil or touch him lightly with a piece of hot iron wire, when he will voluntarily quit his hold. Flocks of sheep that have become infected must be dipped in any good "sheep dip," and the best time to do it is immediately after shearing. Dipping should be repeated in three or four weeks.

Grubs are found in the skins of horses and cattle. They come as a result of the attack of a large "fly" which, while resting on the animal, deposits its egg into or onto the skin. This egg passes the winter in the hide of the animal, in a little round sack which is furnished with an external opening, through which he escapes when his full growth is reached late in the spring, falls to the ground and develops into a fly.

Symptoms. — There will be one or many small, hard bunches upon various parts of the skin, along each side of the backbone particularly, which, upon being closely examined, will be found to have a small hole in its top.

Treatment. — The grubs should be pressed out of the openings during the late winter and destroyed.

Maggots on the Skin are found on *horses, cattle,* and *sheep.* Several flies, the bluebottle, the screw-worm, the meat fly and the flesh fly, attack sores and wet, filthy places, upon the skins of animals, leaving a deposit of their eggs which hatch and develop into maggots that may be the source of considerable trouble unless they are removed.

Treatment. — Clip off the hair or the wool in sheep from wet, filthy places, pick out the maggots carefully and apply to the skin a mixture of one ounce of oil of tar to six ounces of cotton-seed oil, twice daily, for as long as necessary. Or, clean the wound carefully with, first, castile soap and warm water, afterwards with a mixture of one part of carbolic acid to fifty parts of water. If the maggots are in the frog of the foot of the horse; or between the claws of the feet in cattle and sheep, clean the parts out carefully, using no water or soap, and apply dry calomel to the sores.

Flies bite horses and cattle, and suck their blood, causing great annoyance and sometimes the death of the horse.

Treatment. — The usual means of reducing the annoyance and ill effects to horses should always be undertaken; fly nets, dark stables from which the manure is kept removed, etc. *Cattle* may have Persian insect powder well rubbed into the hair, or be bathed with a decoction of walnut, elder-leaves, or tobacco. The poisoned bites may be treated with a mixture of one part of carbolic acid to twenty parts of cotton-seed oil, applied twice daily; or a mixture of one dram of carbolic acid, one-quarter ounce of saleratus, to one quart of water, may be used instead. This last mixture may also be used to relieve the pain caused by the *stings of bees, hornets, and wasps.*

Scab in Sheep. — The parasites causing this well-known disorder, which largely destroys the fleece and too often the life of the animal, is to all intents and purposes a form of louse, although he is not scientifically described as such. There are four varieties: one which burrows in the skin; another that simply bites and holds on, the common scab through which the greatest losses come; a third, the cause of foot scab; and a fourth, the head scab, the smallest of all and scarcely to be seen by the naked eye.

Causes. — The passing of the insect from one animal to another, which may take place by the aid of such inanimate objects as fences, buildings, railroad cars, etc. But as the insect himself cannot live for any great length of time away from the warm body of the sheep, and inasmuch as the eggs are deposited in collections of manure and from there picked up by the wool of animals lying upon them, the *greatest* source of its spread is from pastures upon which flocks have been grazing, as well as in sheds and railroad cars from which the manure has not been properly removed.

Symptoms. — When first attacked by scab a sheep will begin scratching and rubbing himself; he will bite at his wool, pulling it out more or less with his mouth, which gives the fleece a moth-eaten appearance. As he becomes more affected he is constantly uneasy, scratching, pulling at his wool, etc. If such an animal is driven for any distance all the symptoms become aggravated.

Treatment. — The sheep must be "dipped," a process so well and widely known that a description of it is not necessary here. A number of good "dips," are on sale and can be more easily obtained than if made at home. It will be better to use a mixture containing sulphur and *no arsenic.* If a prepared "dip" is used that contains no sulphur, it will be better to add sixteen and one-half pounds of sifted flowers of sulphur to every one hundred gallons of water used.

Dip the entire flock immediately after shearing, and repeat the process in ten days. Keep each sheep in the bath for two minutes, exactly, and dip the head once, at least. Be careful with the rams, as they do not submit to the process so quietly as the ewes. *Again, do not use dips containing poisons.*

Mange. — Affects *dogs* and *horses.*

Causes. — Mange depends upon the presence of a minute parasite which lives in the skin, underneath its outer covering, and is conveyed from animal to animal, directly or otherwise.

Symptoms. — The animal begins to scratch and rub; there first appears upon the surface of the skin a number of small whitish-yellow pustules, which are soon followed by sores, scabs, abrasions when the skin is scratched, bitten, or rubbed by the animal; and a thickened skin after the disorder has been present for some time. True mange is not such a commonly seen disorder as is thought, and inasmuch as the symptoms, when it is present, are *precisely* those of some of the forms of eczema, which are *frequently* seen, it is not possible to separate one from the other, unless, upon a microscopic examination, properly made by one who is expert in the matter, the parasite, which is not visible to the naked eye, is found.

Treatment. — Clip the hair on *horses* over the affected parts. Soften the skin by bathing it for fifteen minutes at a time with hot water, rub it dry and apply the ointment indicated below, once a day, until the skin becomes smooth. In dogs *shave* the hair from the entire skin. Soak the animal in a hot-water bath for fifteen minutes, dry him as soon as possible, and immediately apply the following ointment, which should be well rubbed in, over the entire surface.

Take of beta naphthol, two drams; flowers of sulphur, four drams; balsam of Peru and vaseline, of each, two ounces; rub well together and apply once a day as directed above.

Internal Parasites.

Tapeworms found in Horses, Cattle, Sheep, and Dogs.
Round worms found in Horses, Cattle, Sheep, and Dogs.
Threadworms found in Horses, Cattle, Sheep, and Dogs.
Bots found in Horses.
Gadfly found in Sheep.

Tapeworms. — There are a great variety of these, one or the other or several of which are found in all of the animals, but in dogs and sheep particularly. In sheep they produce results that are individual to that animal, as will be pointed out.

Round Worms are also in great variety of "breeds" and sizes in the different animals, from the large ones measuring some six or eight inches long in horses, with a considerable diameter at their largest parts, to the small threadworms found in the breathing tubes of calves and lambs; and the so-called "pinworm" found in the rectum of horses and dogs.

Symptoms. — With some few exceptions, which will be pointed out, intestinal worms produce no symptoms that are *distinctive* of their presence; all that are generally shown indicating no more than a persistent indigestion, which refuses to yield to the ordinary treatment for that disorder. The animal may show an occasional attack of colic, diarrhœa, and have a persistent dry cough. Dogs frequently have repeated attacks of convulsions (fits), or even muscular twitchings, as in St. Vitus's dance. All of the animals are dull, have fickle or depraved appetites, considerable thirst, and lose flesh rapidly.

Treatment. — In horses and cattle give sixteen powders, each of which contains two drams each of powdered gentian root and powdered sulphate of iron, well mixed together. One powder should be given night and morning in dampened grain feed, until all have been taken. The last powder is to be given in a good-sized warm bran mash; two hours afterward give a good dose of physic, preferably the aloes ball for horses (see prescription); and the horse should not be used until the effects of the cathartic have passed away, something like three days; he may be used during the administration of the powders. Epsom salts will be the best cathartic for cattle.

In Sheep the proper dose will be: Kamala, three drams; gruel made from linseed, six ounces.

In Dogs this prescription may be used for an animal as large as a collie: Kamala, three drams, mixed with one ounce of warmed milk. The dog should not be fed for twelve hours before getting the medicine, which will have to be turned down his throat. The evening before the animal is to receive the worm medicine in the morning he should be given three tablespoonfuls of castor oil.

These doses will be sufficient for either tape or round worms.

Gid or Turn Sick in Sheep. — This term is used to describe a condition arising from the presence, in the brain, of the larvæ (early immature forms) of one of the tapeworms.

Causes. — The eggs of the worm are distributed over the pastures by dogs, usually, and the disorder is more particularly seen among sheep when dogs are used in connection with their care. The eggs of the tapeworm, coming from the dog, are gathered with the grass by the sheep, pass into their stomachs, hatch there, and at once bore through the walls of that organ, getting into the circulating blood. The flowing blood then carries them to all parts of the body; those reaching the brain gain a lodgment, become encysted and continue to grow until they reach to about the size of a bean.

Symptoms. — When the worm has reached its size, as developed in the brain, which will be in from two to three months after it has been taken into the stomach, the sheep is first noticed to be dull, grazes indifferently, does not chew the cud well, staggers as it walks, finally falling down, as if from dizziness. Or, at other times, while grazing, the animal suddenly jumps and runs as fast as he can, for some little distance. If the sheep survives so far, he stops eating, begins to lose flesh and grow weak rapidly, has an anxious look, cannot see, and moves about in circles, with the head hanging. If the trouble is confined to one side the circle is always in the same way; if on both sides, first one way and then the other, until he dies, either from interference with some function of the brain, or from exhaustion.

Treatment. — The only relief to be had is through a surgical operation, which includes the removal of a portion of the skull and the direct withdrawal of the worm. The operation must be done by one who is expert in it.

It will be better to dress the animal for mutton as soon as the first symptoms are shown.

Preventive treatment will be the best of all and may easily be accomplished by giving an occasional dose of worm medicine to the dogs.

Hoose — Husk — Parasitic Bronchitis. — This malady seriously affects calves and lambs; it also exists, but with far less following damage, among cattle and sheep.

Causes. — Hoose is due to the presence of a threadworm, from one, to two and one-half inches long, in the breathing (bronchial) tubes. They appear to gain entrance to the stomach through the water supply, or from grasses grown upon low-lying land, where there is insufficient drainage. It is said that they pierce the walls of the stomach and intestines, gain entrance to the circulation and find final lodgment in the bronchial tubes. This seems to be impossible, but it is to be considered that the same worms are occasionally found in the heart and blood-vessels; which shows that in some way they are present in the circulating blood stream, as well as in the intestines.

Symptoms. — The presence of the parasite in the lung causes violent coughing, difficulty in breathing, anæmia, shown by a white, waxy appearance of the membranes; the skin grows dry, and in lambs the wool has a tendency to fall out; the animal loses strength and dies in from one to four months, depending upon its strength and the number of worms present. Occasionally one or two of the parasites may be found in the matters that are coughed up or sneezed out.

If the worms are in the digestive organs as well as the lungs there will be additional symptoms of indigestion, diarrhœa, colicky pains, considerable thirst, etc.

Treatment. — As a preventive measure move the animals to higher pasture as soon as the condition is recognized, or, better, do not turn them into low, wet pastures at all. *Medical treatment* consists in inhalation of the gas of burning sulphur or the injection of the following mixture into the windpipe: Iodine, one-half dram; iodide of potash, two and one-half drams, boiled water, which has been allowed to cool, three ounces, turpentine, two ounces; olive oil, six ounces; mix the turpentine and oil together, then add the mixture of iodine and water to it. When it is to be used, shake the bottle well, take from one to two drams of the mixture into a large hypodermic syringe, and, pushing the sharp, hollow needle of the instrument through the skin and wall of the windpipe, slowly inject the mixture. Repeat the process every two or three days for as long as is necessary. Both of these methods will be safer if done by one who is expert in the matter.

Bots in Horses. — These parasites come from the gadfly of the horse, which, generally while the animal is at pasture, deposits and glues a small yellow egg on the hair covering various parts of the body, mostly upon parts that are within reach of the mouth. When, in licking itself, the tongue of the horse reaches any of the eggs, after they are three weeks old, its warmth and moisture hatches them, when, as maggots, they enter the mouth and are swallowed into the stomach, to the walls of which they fasten themselves by means of a pair of hooks that are near their heads, and so remain until their full growth is attained; they then loosen their hold and, passing through the bowels, are dropped onto the ground with the manure, having spent about eight months in the horse. When they reach the ground they bury themselves beneath its surface and remain there, as a chrysalis, for six or seven weeks, when they come out as a fully formed gadfly ready, in their turn, to deposit the eggs upon other horses. While it is sometimes true that, if the bots are in large numbers, they *occasionally* cause illness in the horse, there are no *definite* symptoms pointing to their presence; nor is there any special treatment that will dislodge or kill them. Sickness of horses, from bots, is of very, very rare occurrence, notwithstanding the wide-spread opinion to the contrary.

Parasitic Nasal Catarrh of Sheep.—This disorder results from the attack of another gadfly, resembling an overgrown horsefly, which deposits its maggot-like larvæ up in the nostrils of the animal, where they remain until they are about three quarters of an inch long, when they drop to the ground, bore into the earth and remain there, in chrysalis form, for one or two months, when they emerge as the fully formed fly.

Symptoms. — The sheep, on becoming aware of the presence of a fly, shakes his head, stamps with the front feet, runs, with his nose close to the ground, into the middle of the flock. The whole flock become alarmed, put their noses near to the ground and huddle together as closely as possible.

The young maggots, deposited on the membrane lining the nostril, at once commence to crawl higher up in those cavities, often reaching other cavities in the head; these movements cause considerable irritation in the sheep, evidenced by shaking the head and sneezing. As the maggots grow in size the sheep show all the symptoms of a severe nasal catarrh, as already described. The duration of the attack may be from sixty days to ten months, depending upon the length of time during which the maggots remain in the cavities.

Treatment. — The practical remedy is prevention. This may be easily accomplished in small flocks by smearing the noses of all of the sheep, by means of a brush, with a mixture of equal quantities of tar and grease for at least once a week during the entire fly season. Large flocks may be herded on dusty ground, during that part of the day in which the flies are most active.

An ingenious method of prevention has been proposed as follows:

"Take a square log and bore holes in it with a large auger; in these place salt, and dress the edges of the holes with tar. Sheep will then apply tar to their noses every time they eat the salt." This method might well repay trial, in large flocks.

Curative treatment is by surgical operation only and must be done by an expert. It is not practicable excepting in the case of an occasional animal that has an especial value.

CHOLERA—HOGS.

Many forms of malignant diseases among hogs are popularly designated cholera, and the use of this ill-chosen term has led to a wide misunderstanding of the nature of these diseases, and to many mistakes in treatment, as well as in the use of measures of prevention

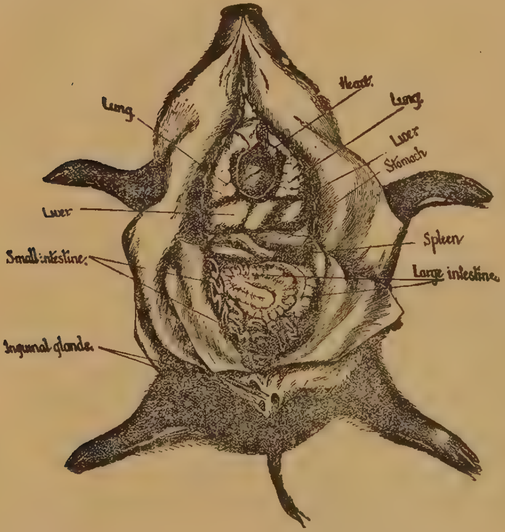
Hog sick of Hog Cholera.

The malignant character of these kindred forms of diseases, and the heavy loss occasioned by their wide-spread ravages, make a knowledge of the preventative measures and methods of treatment a matte of great importance to the farmer and breeder.

The Germ which Causes Hog Cholera.

The germ, or microbe, which causes Hog Cholera is present in th blood of sick hogs and also in the excretions and urine. The diseas can be produced by inoculating well hogs with the blood or urine from sick hogs. The germ which is in this blood and urine is s small that it cannot be seen with the strongest microscope. It has never been cultivated in laboratories, and we know of it only by the effects which it produces. The germ of Hog Cholera is therefore classed with the "invisible micro-organisms."

The disease can be started in a herd only by introducing the "germ" which causes it. Yet there are many factors which will make a herd more susceptible to the disease, such as improper feeding and unsanitary condition of hog lots, damp or cold sleeping places and dirty feeding troughs.



Showing Location of Organs which may be Affected by Hog Cholera.

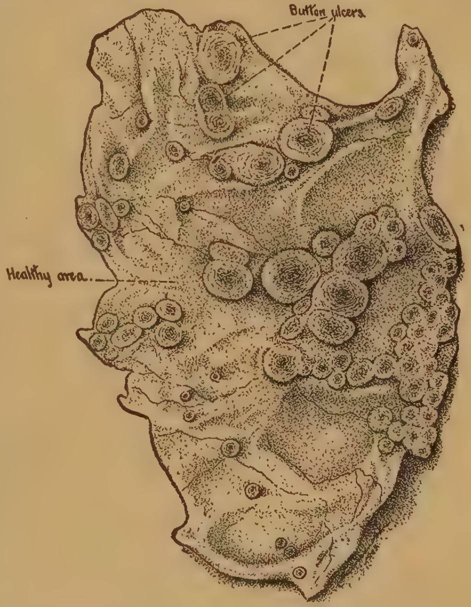
"Cholera-sick Hogs" may get onto a farm (1) by escaping from a neighboring herd, (2) by the purchase of new stock which may show no symptoms of sickness until some days after purchase, (3) by returning show hogs to the herd after visits to fairs or stock shows, (4) by purchase of hogs which have apparently recovered from hog cholera. The risk incurred by purchase of new hogs or the return of hogs which have been shown at fairs is chiefly due to the fact that such hogs are generally transported by rail, unloaded in public stock yards, or driven along public roads. Sick hogs are frequently shipped by rail, and the roads over which they are driven, the stock yards, and the railroad cars thus become contaminated with the germ of Hog Cholera. When healthy hogs are placed in such cars or yards or are driven along public roads they almost always have the opportunity to contract the disease, but the interval between shipment and delivery to the purchaser is so short that the symptoms do not appear until a week or more after delivery, when it is usually too late to prevent the spread of disease to hogs already on the farm. The only safe plan in such cases is to place all new arrivals in lots entirely separated from those occupied by the main herd, and to keep them isolated until all danger of their developing Hog Cholera has passed.

The germ of the disease may be transported in a minute particle of dirt on the feet of attendants who have previously visited farms where Hog Cholera exists. It may also be carried in this way by dogs, and by crows and other birds. The disease may be carried downstream from herds which are affected above. It is therefore well to avoid placing hogs so that they will have access to streams which pass through other farms. It is quite possible for infection to be introduced into a farm by litter dropped from cars in transit, especially if hogs on the farm have access to the tracks.

After Hog Cholera has visited a farm, the lots, hog houses, feeding-troughs, and implements used for cleaning have naturally become contaminated with the germs of the disease; and if new stock is placed in such yards soon after these were occupied by sick hogs the new hogs are very likely to contract the disease.

Before restocking, the premises should be cleaned and thoroughly disinfected

It is a very difficult matter to be sure that Hog Cholera is actually present, for the outward symptoms are not characteristic, but only such as might be expected in any acute disease. The same may be said of some of the changes which take place in the internal organs. It is therefore necessary to consider all the features of the disease before making a positive decision concerning the presence of Hog Cholera in a herd.



Portion of Large Intestine of Hog, showing Button-like Ulcers Caused by Cholera.

The important features of Hog Cholera are:

Symptoms.

Contagiousness; sluggishness; weakness; loss of appetite; high fever; inflammation of the eyes with gumming of the lids, and diarrhœa; red or purplish blotches on the skin, especially over the surface of the abdomen, inside of the legs, and around the ears and neck.

Summary of Post-mortem Appearances.

Care should be exercised in examining carcasses of sick hogs, as a cut or scratch on the hand might serve as a point for inoculation; and their diseases are highly dangerous to man.

The important lesions found after death from Hog Cholera are as follows:

Reddening of the skin; bloody spots on the lungs or surface of the heart; in the kidneys; on the outer surface and inner lining of the intestines and the stomach. Reddening of the lymphatic glands; enlargement of the spleen; ulceration of the inner lining of the large intestines.

In the lingering of chronic cases of Hog Cholera it is usual to find the intestinal button-like ulcers (see illustration).

Any one or all of the lesions may be found in a hog which has died from Hog Cholera. It is rare to find all in any individual case.

When a hog once contracts "Cholera" the chances are that the hog will die in a few days. Therefore it is necessary to quarantine the sick hog from the herd and improve if possible the sanitary condition of the herd, and give the herd the following preventative medicine:

	Pounds
Wood charcoal	1
Sulphur	1
Sodium chlorid	2
Sodium bicarbonate	2
Sodium hyposulphite	2
Sodium sulphate	1
Antimony sulphid (black antimony)	1

This powder is mixed with the feed in the proportion of a large tablespoonful to each two hundred pounds weight of hogs to be treated, and should not be given oftener than once a day.

There are so many complications arising in Hog Cholera that this medicine cannot wholly be relied upon to prevent the disease, except in so far as it improves the general health of the hogs.

APPENDIX.

Methods of Giving Medicines to Animals.

Balls or Pills are given to *horses* by first wetting or oiling the surface of the ball; grasping one extreme end of it between the pointed fingers and thumb of the right hand; pulling the tongue well out to the left side of the mouth, with the left hand; and placing the ball well back in the mouth, and over the belly of the tongue, withdrawing the right hand quickly and releasing the tongue immediately.

Unless one is practised in this operation, the right hand had best be covered with a glove to prevent its being scratched by the teeth.

Drenches or Drinks. — Fluid medicines are given to horses by first passing a loop of rope into the mouth, as a bit is placed, slipping a pitchfork tine into the other end of the loop, and raising the head so that the medicine will flow *down* the throat. Of course the head may be raised in any other way. The medicine having been previously placed in a bottle, made of glass or *rubber*, without a shoulder, is then turned into the uplifted mouth, carefully and slowly, and the head held up until the medicine is all swallowed. Care should be taken not to let the bottle get between the horses' teeth.

The process of drenching *cattle* and *sheep* is much more easily accomplished: an assistant holds the head up so that the mouth is on a horizontal line with the neck, or a little higher. The dose giver, standing at the left side of the animal, pulls the cheek a little to one side with a finger of the left hand and turns the medicine slowly from the bottle into the pocket so made. These animals swallow much more readily than horses; but if signs of choking or a desire to cough is shown during the process, the head must be immemediately released, or the fluid is apt to go into the lungs. This same caution should be observed while drenching horses.

In giving fluid medicines to *dogs* there is no necessity for opening the mouth, in fact it is best not to do so. The head is held up by an assistant; a finger inserted at the angle of the mouth pulls the cheek out, thus forming a pouch into which the dose may be slowly poured.

Pills are given to dogs by having an assistant open the mouth wide, when the pill is quickly placed as far back as possible and pushed over the belly of the tongue with a finger or small stick, like a lead pencil.

Externally.

Liniments and lotions are to be rubbed onto the desired portions of the surface of the body. They are generally wasted by being used in too large quantities at a time. The harder a *stimulating liniment* is rubbed in, the quicker and greater will be its action. Cooling and healing fluids usually give the best results if they are simply "sopped" onto the parts.

Blisters. — Before applying any blister the hair should first be closely clipped from the part to be treated. Parts below, over which the blister, or the discharge produced by it, are likely to run, should be covered lightly with a little lard or sweet oil.

Application of a Blister of Spanish Flies.—The parts to be blistered should then be spread with a moderate covering of the ointment, which is to be rubbed in with the hand, more of the ointment added and rubbed in if necessary; the surface is then to receive a light spreading of the ointment, which is to be left upon the surface; and the animal should be tied up so that he cannot reach the parts with the mouth, or lie down. As soon as the discharges caused by the blister have dried, which will be in about three days, the part should be carefully washed by *sopping* it with castile soap and warm water, using as little water as possible and considerable of the soap. After the parts have become thoroughly dry, from the washing, they may receive a *very light* covering of lard or sweet oil and the animal may "have his head" again. The covering with *a little* lard or sweet oil should be repeated every three days until the hair begins to grow again. If it should happen that the blister is rubbed by the animal upon any other part of the body, it should be immediately washed off and the part greased over. The harder a blister is rubbed in the greater will be its action.

Blisters of Red Iodide of Mercury are to be applied by first rubbing a little of the ointment well into the parts, using only one or two of the fingers, instead of the whole hand. The first application should be added to, once a day, until the parts become sore, by having a *little* more of the ointment rubbed *lightly* onto them. This blister is allowed to remain, without washing, until a heavy scab is formed, when it may be oiled, *lightly*, every other day, until it begins to be removed by the new-coming hair. The horse should be kept standing as long as the ointment is being applied.

Poultices may be made of bran, oil-meal, cotton waste, sponge, and either hot or cold water, the object being to keep moisture constantly applied to the part under treatment. Poultices are conveniently applied to the feet of horses by using a square piece of some strong material, as oat bagging, which is large enough to hold he poultice and come up over the hoof to be tied under the fetlock; otherwise they are to be held in place by bandages.

Fomentations are generally used upon parts where it is impossible to retain a poultice. They consist in frequently *sopping* the parts with hot water for fifteen or twenty minutes at a time.

Medicines and their Doses.

For convenience, certain abbreviations will be used, as follows: For the animals: H. for horses; C. for cattle; S. for sheep; D. for dogs. For the doses: m. for drops; gr. for grains; dr. for drams; oz. for ounces; lb. for pounds; pt. for pints; dr. 1=1 teaspoonful; oz. 1=2 tablespoonfuls fluid measure; 16 ounces=1 lb. dry measure.

Table of Doses.

Acetanalid. H., dr. 1–2; S., dr. ½–1; D., gr. 3–5.
Acetic Acid, Dilute. Used only externally, instead of vinegar.
Aconite, Tinc. of Root. H., m. 5–30; C., dr. ½–1; S., m. 5–10; D., m. ½–5.
Alcohol. H. and C., oz. 1–3; S., dr. 2–4: D., dr. 1–2.
Aloes, Barbadoes. H., oz. ½–1; C., oz. 1–2; S., oz. ½–1; D., gr. 20–60.
Ammonia, Aromatic Spirits of. H. and C., oz. 1–2; S., dr. 2–4; D., dr. ½–1.
Ammonia Carbonate. H., dr. 2; C., dr. 3–4; S., gr. 15–40; D., gr. 3–10.
Ammonia, Water of. H. and C., oz. ½–1; S., dr. 1–2; D., m. 10–20.
Anodyne Hoffman's. H. and C., oz. 1–2; S., dr. 2–4; D., m. 10–60.
Antipyrin. H., dr. 1–2; S., dr. ½–1; D., gr. 3–7.
Atropine, Sulphate of. H., gr. 1–2; C., gr. 1–2; S., gr. $\frac{1}{15}$–$\frac{1}{12}$.
Balsam of Peru. H. and C., oz. 1–2; S., dr. 1–2; D., m. 10–30.
Belladonna, Fluid Extract of. H., dr. 1–2; C., dr. 2–3; S., m. 10–15, D., m. 1–3.
Bismuth Subnitrate. H., dr. 2–4; D., gr. 10–30.
Brandy. H. and C., oz. 2–4; S., oz. ½–1; D., dr. 1–4.
Bromide of Potash. H. and C., oz. 1–2; S., dr. 2–4; D., gr. 5–60.
Buckthorn, Syrup of. D., oz. 1–2.
Calomel. H., dr. ½–1; C., dr. 5–6; D., gr. 3–5 (single doses.)
Camphor, Spirits of. H., dr. 1–3; C., dr. 2–4; S., m. 15–60; D., m. 3–20.
Carbolic Acid, 90 per cent solution. H. and C., m. 15–30; S., m. 5–10.
Carron Oil. H. and C., oz. 4–6; S., oz. 1–2; D., dr. 1–8; Foals and Calves, oz. 2–4; Lambs, oz. ½–1.
Cascara, Fluid Extract of. D., m. 5–30.
Castor Oil. H. and C., pt. 1; S., oz. 2–4; D., oz. 1–2.
Cerium Oxalate. D., gr. 3–5.
Chlorate of Potash. H. and C., oz. ½–1; S., dr. ½–1; D., gr. 5–20.
Cod-liver Oil. H. and C., oz. 2–4; S., oz. ½–1; D., dr. 1–3.

Colchicum, Wine of. H. and C., dr. 3–8; D., m. 10–30.
Copper, Sulphate of. H. and C., dr. 2–4; S., gr. 20–40.
Cottonseed Oil. (See Olive Oil.)
Cream of Tartar. H. and C., oz. ½–1; S., oz. ½; D., dr. ½–1.
Croton Oil. H. and C., m. 15–30; S., m. 3–5; D., m. ½–3.
Digitalis, Tincture of. H. and C., dr. 2–4; S., m. 30–dr. 1; D., m. 5–30.
Ether. H. and C., oz. 1–2; S., dr. 2–4; D., m. 10–60.
Epsom Salts. H., lb. ½–1; (laxative) oz. 2–4; C., lb. 1–2; (laxative) oz. 3–4; Calves and Foals, dr. 2–3; S., oz. 4–6; D., dr. 1–4.
Gentian, Powdered Root. H. and C., oz. ½–1; S., dr. 1–2; D., gr. 5–30.
Gentian, Fluid Extract. H. and C., oz. ½–1; S., dr. 1–2; D., m. 5–30.
Ginger, Powdered Root. H., dr. 2–oz. 1; C., oz. 1–4; S., dr. 1–2; D., gr. 5–15.
Ginger, Tincture of. H. and C., oz. 1–4; S., dr. 2–4; D., dr. 1–4.
Golden Seal. Hydrastus Canadensis Powder. H. and C., dr. 2–4; S., dr. 1–2; D., gr. 5–30.
Iodide of Potash. H., dr. 2–4; C., dr. 4; S., gr. 15–30; D., gr. 2–10.
Iodine. H. and C., dr. ½–1; S., gr. 10–20; D., gr. 2–5.
Iron, Tinct. of Chloride. H. and C., oz. 1–2; S., m. 20–30; D., m. 5–60.
Iron Sulphate, Powdered. H. and C., dr. 1–2; S., gr. 20–30; D., gr. 1–5.
Jalap. D., dr. 1–2.
Kamala. H., oz. 1; D., dr. ½–2.
Linseed Oil (raw). H., pt. ½–1; C., pt. 1–2; S., oz. 6–12; D., oz. ½–2.
Male Fern, Oleoresin of (for tapeworm). H. and C., dr. 3–6; S., dr. 1–2; D., m. 15–60.
Morphine. H. and C., gr. 3–10; S., gr. ½–1; D., ⅛–½.
Mustard (emetic, dog). D., oz. ½, in warm water.
Nux Vomica, Powdered. H. and C., dr. 1–2; S., gr. 20–30.
Nux Vomica, Fluid Extract, doses same as powder.
Olive Oil. H. and C., pt. 1–2; D., oz. 2–4. *Cottonseed* or *Sweet Oil* may be used internally in place of this.
Opium, Tincture. H., oz. 1–2; C., oz. 2–3; S., dr. 2–4; D., m. 3–30.
Phenacetin. H., dr. 2–3; D., gr. 3–10.
Quinine, Sulphate of. H., gr. 5–60; C., dr. ½–1½; S., gr. 5–10; D., gr. 1–2.
Rum. H. and C., oz. 2–4; S., oz. ½–1; D., dr. 1–4.
Salicylic Acid. H. and C., dr. 2–6; S., dr. 1–2; D., gr. 5–30.
Saltpeter, Nitrate of Potash. H. and C., oz. ½–1; S., dr. ½–1; D., gr. 5–20.
Soda Bicarbonate or Saleratus. H. and C., oz. ½–2; S., dr. ½–1; D., gr. 5–30.
Sulphite of Soda. H. and C., oz. 1; S., dr. ½–1; D., gr. 5–30.
Sulphur, Flowers of. H. and C., oz. 2–4; S., oz. ½–1; D., dr. ½–4.
Sweet Spirits of Niter. H. and C., oz. 1–4; S., dr. 2–4; D., m. 10–60.
Tar, Oil of, Oil of Cade. H. and C., oz. ½–1; S., dr. 1–2; D., m. 15–60.
Whiskey. H. and C., oz. 2–4; S., oz. ½–1; D., dr. 1–4.
Zinc, Oxide of. H. and C., dr. 1–2; D., gr. 5–10.
Zinc, Sulphate of. Emetic only in dogs, gr. 10–15.

PRESCRIPTIONS.

Cathartics

Horse.

(1)	Powdered Barbadoes Aloes	1 oz.
	Powdered Ginger Root	½ dr.
	Vaseline	q. s.

Enough of the vaseline should be used to make the whole mass of the consistency of rather hard putty; all is then to be rolled up in a piece of brown tissue paper, into the form of a shotgun cartridge, and given, as directed, all at one dose. Do not repeat; it should show its effects in about twenty-four hours. The dose may be strengthened by adding from ½–1 dr. of calomel.

If the ball cannot be given take:

Powdered Barbadoes Aloes	1 oz.
Water	½ pt.

Mix, and float the aloes down, as a drench.

Calomel may be added to this dose, as above.

(2)	Epsom Salts	¾ lb.
	Tincture of Ginger	2 dr.
	Warm Water	1 pt.

Dissolve the salts in the water, add the ginger, and give all at one dose, as a drench.

(3)	Linseed Oil	1 pt.
	Saleratus	1 oz.

Shake up the saleratus with the oil and give as a drench.

Cattle.

(4)	Epsom Salts	1–2 lb.
	Molasses	2 oz.
	Powdered Ginger	1 tablespoonful.
	Warm Water	3 pts.

Dissolve the salts in the water, add the other two articles, and stir the mixture well together; give all at a dose, as a drench. The large quantity of water is necessary for this dose in cattle. It may be repeated in twenty-four hours, if necessary. In a very obstinate case the *first* dose may have five or six drops of croton oil added to it. The oil should not be repeated.

(5)	Raw Linseed Oil	1–2 pt.
	Saleratus	2 oz.

Shake well together and give in one dose, as a drench.

Sheep.

(6)	Epsom Salts	6 dr.
	Molasses	1 oz.
	Powdered Ginger	2 teaspoonfuls.
	Warm Water	1 pt.

Mix and give as for cattle.

(7)	Linseed Oil	6–10 oz.
	Saleratus	1 teaspoonful.

Mix and give as for cattle.

(8)	Powdered Barbadoes Aloes	½–oz.
	Tincture of Ginger	1 dr.
	Linseed Oil	6 oz.

Shake all together and give as a drench.

Lambs.

(9)	Warm Lard	3–4 tablespoonful.

Dogs.

(10)	Castor oil	1 oz.
	Syrup of Buckthorn	½oz.
	Syrup of Poppies	2 dr.

Mix and give all at a dose, to a medium sized dog. The dose may be increased for larger, or decreased for very small dogs.

(11)	Castor Oil Olive Oil, equal portions	½ oz.

This mixture may be used for dogs of the size of a fox terrier; and is best for all delicate animals. For toy dogs it should be lessened, a little.

Compound Cathartic Pills contain, to one pill

(12)	Extract of Colombo, compound	1¼ gr.
	Extract of Jalap	½ gr.
	Calomel	1 gr.
	Gamboge	¼ gr.

These pills may be got from any druggist. The dose is from one-half of one pill for small, to two or three pills for large, dogs.

Compound Cascara Tablets contain to one tablet.

(13)	Extract of Cascara	2 gr.
	Extract of Belladonna	1/16 gr.
	Podophylin	¼ gr.

The tablets may be procured from the druggist. The dose is from one half to one or two tablets, given once a day, at night. They are very useful in cases of slow digestion with persistent constipation.

Laxatives.

Any of these cathartic doses, excepting those containing aloes and croton oil, may be so lessened in quantity as to be used as a laxative; which may be repeated once each day for as long as is necessary. They should generally be reduced to about one quarter of their original strength.

Tonics.

Horse.

(14)	Powdered Sulphate of Iron	
	Powdered Gentian Root, equal parts	3 oz.

Mix well together and divide into twelve powders. A powder to be given night and morning in dampened grain feed. A good general tonic. To be used when membranes are pale.

Or,	Powdered Golden Seal	2 oz.
	Powdered Nux Vomica	1 oz.
	Powdered Sulphate of Iron	1 oz.
	Bicarbonate of Soda	2 oz.

This powder *must* be well mixed; it is then to be divided into eight separate powders, one of which should be given night and morning in dampened grain feed. The best all-round tonic, especially following chronic indigestion, hide-bound, loss of flesh, and in *heaves*.

Or,

(15)	Powdered Gentian Root	4 oz.
	Powdered Sulphate of Iron	2 oz.
	Powdered Ginger Root	1 oz.
	Powdered Nux Vomica	1 oz.

This powder *must* be well mixed, and divided into eight equal parts, one of which is to be given night and morning, in the usual way. It is to be used when a slight stimulating effect is desired, as when the appetite is poor. All tonic powders may be given in the form of a ball, by mixing them with a sufficient quantity of molasses, and wrapping them in paper; or by simply floating them in one half pint of water and giving, as a drench, just after the animal has finished eating, if they are refused when mixed with the grain.

"CONDITION POWDER"

(16)	Powdered Bayberry Bark	
	Powdered Golden Seal	
	Powdered Bloodroot	
	Powdered Salt, of each	2 lbs.
	Powdered Charcoal	
	Powdered Black Antimony	
	Powdered Ginger Root	
	Powdered Anise-seed, of each	1 lb.

All to be thoroughly mixed. Dose, tablespoonful, twice daily. This will be found to be a good mild tonic to be used when the animals are in no more than an unthrifty condition.

Fluid Tonic

(17)	Strychnine	8 grs.
	Tincture of Gentian Root	
	Water, equal parts	8 oz.

Mix and shake until strychnine is dissolved. Dose, one ounce, three times daily.

Cattle. The same tonics in the same doses as prescribed for horses, may be given to cattle.

Sheep.

(18)	Tincture of Chloride of Iron	2 dr.
	Tincture of Gentian Root	
	Tincture of Ginger Root, of each	4 dr.
	Water	1 pt.

Mix and give two tablespoonfuls three times daily, if anæmic.

(19)	Tincture of Chloride of Iron	4 oz.

Ten to twenty drops may be given three times daily on a little grain feed.

(20)	Powdered Nux Vomica	2 dr.
	Powdered Bicarbonate of Soda	2 dr.
	Powdered Golden Seal	
	Powdered Ginger Root	
	Powdered Gentian Root, equal quantities	6 dr.

Mix thoroughly; divide into twelve powders, and give one powder three times daily in a little water, as a drench. This mixture is to be used when the sheep continues to be dull, as if the nerves needed strengthening.

Condition Powders for Sheep

(21)	Sulphate of Iron	1 oz.
	Powdered Gentian Root	4 oz.
	Powdered Willow Charcoal	4 oz.
	Powdered Fenugreek	1 oz.
	Powdered Nitrate of Potash (saltpeter)	4 dr.
	Linseed Meal	4 oz.

Mix all well together. Give one tablespoonful in feed once or twice daily.

Tonic for Anæmia

(22)	Sulphate of Iron	2 oz.
	Common Salt	4 oz.
	Gentian Root, powdered	4 oz.
	Licorice Root, powdered	8 oz.

Mix thoroughly and give one tablespoonful twice a day in grain feed, dampened.

Dogs.

(23) Pill of Citrate of Iron and Quinine, 1 grain each.

Give a pill three times daily, for a small dog; double as much for a collie, pointer, or setter. A good general tonic; useful after distemper.

(24) Bland's Pills.

Give a pill morning and night to a medium sized dog; one-half one to small animals. A good general tonic; useful when the dog is not eating well or has pallidity of the membranes.

(25) Tincture of the Chloride of Iron, 4 oz.

For a medium sized dog give eight drops, three times daily. It is a good appetizer and helps to make red blood. It, however, blackens the teeth, temporarily; and when it is being taken a small dose of oil will probably have to be given occasionally.

Fever Mixtures

Horses.

26)	Sweet Spirits of Niter	7 oz.
	Fluid Extract of Belladonna	1 oz.
	Sulphate of Quinine	40 grs.
	Dilute Sulphuric Acid	40 m.

Mix all in a bottle and shake until the quinine is dissolved. The dose will be two ounces of the mixture given in a tumblerful of cold water, three or four times daily.

Cattle. The same as for horses.

Sheep.

(27)	Sulphate of Quinine	40 gr.
	Tinct. of Citrate of Iron	4 dr.
	Whiskey	7½ oz.

Mix well together. Shake the bottle and give two tablespoonfuls at a dose, in half pint of molasses and water, each four hours, to an adult sheep — less in proportion to age and size. To be used in Pneumonia.

(28)	Fluid Extract of Belladonna	2 dr.
	Sweet Spirits of Niter	2 oz.
	Muriate of Ammonia	4 dr.
	Water	6 oz.

Mix well together and give one tablespoonful at a dose, in one third pint of molasses and water, every two hours.

Dogs.

(29)	Calomel	4 gr.
	Sub-nitrate of Bismuth	72 gr.
	Phenacetine	48 gr.

Mix well together and divide into twenty-four powders, of which one may be given to a fox terrier as often as each two hours, for not exceeding two days, when the powder, if there is further need, may be given three times daily. Larger dogs will require double the dose or more. To be given dry on the tongue.

(30)	Tincture Aconite Root	20 m.
	Sweet Spirits of Niter	6 dr.
	Bromide of Potash	4 dr.
	Liquid of the Acetate Ammonia	4 oz.

Mix well together. Give a teaspoonful every two hours, in a little cold water.

Electuaries

Medicines in this form are to be used when, from soreness of the throat or otherwise, the animal is unable to swallow. The method of administration is by pressing the quantity onto the outside of one of the back teeth, from which it is slowly dissolved.

(31)	Extract of Belladonna	1 oz.
	Chlorate of Potash	2 oz.
	Licorice, not powdered	5 oz.

Simple syrup, enough to make proper consistency. Mix well together. Use one half ounce of the mass, each two hours, for a horse, same for cattle, and less for sheep and dogs.

Liniments

Soap Liniment — Opodeldoc.

(32)	Castile Soap in fine Shavings	3 oz.
	Powdered Gum Camphor	1 oz.
	Oil of Rosemary	2 dr.
	Oil of Thyme	1 dr.
	Spirits of Wine	1 pt.

Dissolve the soap and camphor in the spirits of wine and add the oils. This mixture can be obtained much more easily from the druggist. It forms the basis of many other liniments. If rubbed onto the skin its action is mildly stimulating.

Stimulating.

(33)	Soap Liniment	**5 oz.**
	Turpentine	
	Strong Ammonia	
	Oil of Origanum, equal parts	**2 dr.**

Shake well together in a bottle. This is the best all-round stimulating liniment, and can be used upon all the animals.

Camphorated Oil.

(34)	Camphor	1 oz.
	Sweet oil	3 oz.

Dissolve the camphor in alcohol and add the oil. It is better to obtain this ready made from the druggist.

Aconite Liniment.

(35)	Tincture of Aconite Root	2 oz.
	Sweet Oil	4 oz.
	Creosote	1 oz.

Mix, and shake bottle. This is one of the good liniments for application to a bruise, when the skin is not broken, or to a sprain of any kind. It removes and decreases inflammation, irritation, and pain. Do not use on dogs.

Creosote Liniment.

(36)	Creosote	1 oz.
	Turpentine	1 oz.
	Olive or Sweet Oil	2 oz.

Mix, and shake bottle. This gives relief from pain and is to be used for rubbing upon stiff joints. Do not use on dogs.

For Rheumatism.

(37)	Tincture of Aconite Root	
	Oil of Wintergreen	
	Chloroform, equal parts	1 oz.
	Soap Liniment	5 oz.

Mix, and rub well onto the parts, once or twice daily. Do not use on dogs.

Lotions.

Zinc and Lead.

(38)	Sulphate of Zinc	
	Acetate of Lead, equal parts	6 dr.
	Water	1 qt.

Put the powder into the water and shake the bottle until all lumps are dissolved. Very useful in galls and sores on the skin, in scratches, and for cooling out swollen legs, etc. The bottle must be well shaken frequently while this lotion is being used; and it is better sopped than rubbed on. It should not be used on dogs.

Sulphur Lotion.

(39)	Sulphurette of Potash (liver of sulphur)	½ lb.
	Water	4 qts.

Pound the sulphur into small pieces; put it into the water; let it stand, with frequent shaking, for three days, then carefully turn off the clear liquid. The lotion should be of a sherry color. It will not be of that color unless the sulphur used is fresh and good; there is often some little trouble about getting it so. It will kill lice and cure many disorders of the skin in all animals.

For Scratches.

(40)	Impure Carbonate of Zinc	2 oz.
	Powdered Alum	1½ oz.
	Precipitated Chalk	10 oz.
	Creosote	1½ oz.
	Beeswax	1½ oz.
	Lard	15 oz.

The lard and wax are to be melted together and the powders are then to be stirred into it. All must be will mixed and should be stirred, while cooling, often enough to keep it so. Besides being useful in scratches it also answers a good purpose when any ointment of zinc is required; and in certain forms of eczema, except in dogs. It should be applied twice daily.

Sulphur Ointment.

(41)	Flowers of Sulphur	2 oz.
	Carbonate of Potash	1 oz.
	Lard	8 oz.

Mix well together. Is useful in many skin diseases.

For Itching Skins.

(42)	Thymol	15 gr.
	Alcohol	2½ dr.
	Glycerine	5 dr.
	Water enough to make	1 pint.

Mix and rub well onto the parts twice daily.

Loss of Appetite in Horses and Cattle.

(43)	Fluid Extract of Red Pepper	2 dr.
	Fluid Extract of Golden Seal	3 oz.
	Fluid Extract of Nux Vomica	3 oz.

Mix. Dose, two teaspoonfuls on tongue three times a day.

Hoof Ointment.

(44)	Mutton Tallow	2 oz.
	Resin	2 oz.
	Barbadoes Tar	2 oz.
	Yellow Wax	1 oz.
	Castor Oil	1 oz.

Melt all together over a slow fire. If it is desired to have it rather soft, when the mixture is entirely melted stir in eight ounces of raw linseed oil. This mixture, if used on the hoofs daily, will keep them in good growing condition and make them look well.

Solution of Argyrol for Inflamed Eyelids.

(45)	Argyrol	24 m.
	Water	1 oz.

Mix. Use two drops three times daily.

Solution of Lysol.

(46)	Lysol	50 m.
	Water	8 oz.

Mix. Use freely in dressing sores, wounds, etc.

Hair Grower.

(47)	Balsam of Peru	4 dr.
	Tincture Spanish Fly	4 dr.
	Castor Oil	1 oz.
	Lard	1 oz.

Melt the lard, add the oil and other ingredients. It will cool into a soft ointment, which may easily be well rubbed onto the parts, once a day.

Vomiting Powders for Dogs.

(48)	Sub-nitrate of Bismuth	30 gr.
	Oxalate of Cerium	30 gr.

Mix well together and divide into ten powders. Give a powder each two to four hours as required.

Alterative Powder.

(49)	Flowers of Sulphur	4½ oz.
	Saltpeter, powdered	4½ oz.
	Black Antimony	12 dr.

Mix and divide into twelve powders. Give a powder on damp grain feed, or in cupful of molasses and water, morning and night. These powders will give good results when the skin is in an unhealthy condition, or with little "boils" upon it, in horses.

Ichthyol Ointment.

(50)	Ichthyol	1 dr.
	Lard	1 oz.

Mix well; and use on small patches of eczema. Or in long-haired dogs a lotion may be of easier application. Substitute one ounce of raw linseed oil for the lard; or one ounce of water may be used instead of the oil.

Antidotes for Poisons.

First. Send for a veterinary surgeon.

Second. Induce vomiting in dogs by the use of mustard. To the other animals give raw linseed oil, whites of eggs, and milk. These last may also be given to dogs.

Special Poisons.

Acids of any kind. Give soap-suds, magnesia, lime water.

Prussic Acid. Ammonia in water. Dash cold water onto the head.

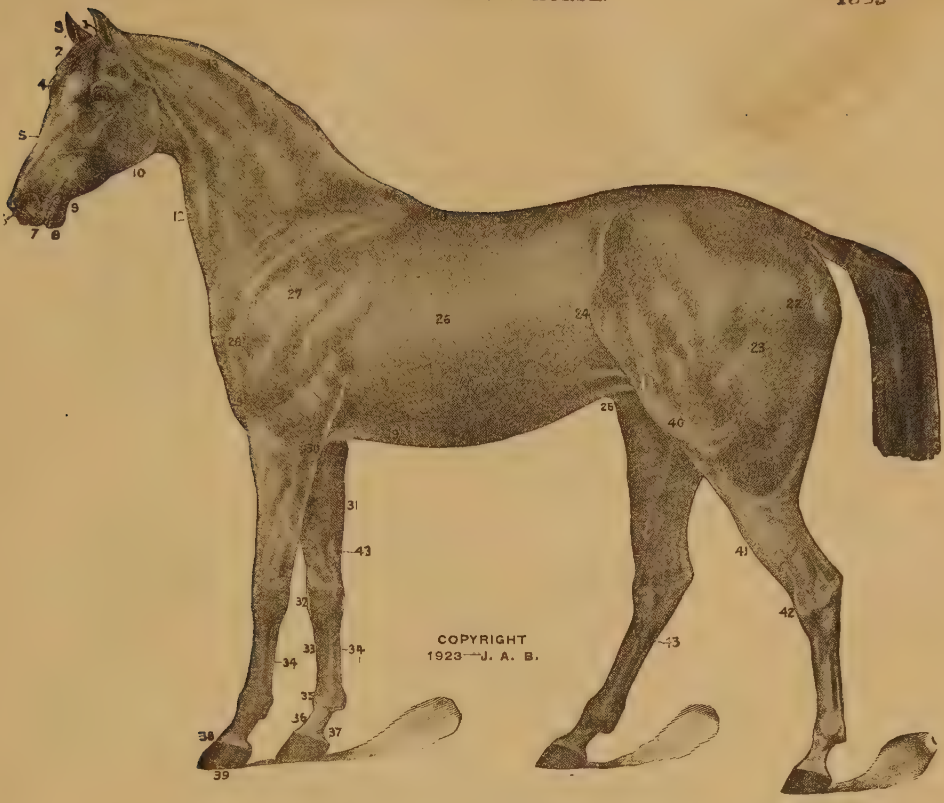
Carbolic Acid. Whites of egg, flour and water.

Potash, Lye, Ammonia. Vinegar and water.

Arsenic, Paris Green. Whites of eggs, oil, lime water, flour and water.

Iodine. Starch and water, strong tea.

Opium. Strong coffee, and keep animal moving.



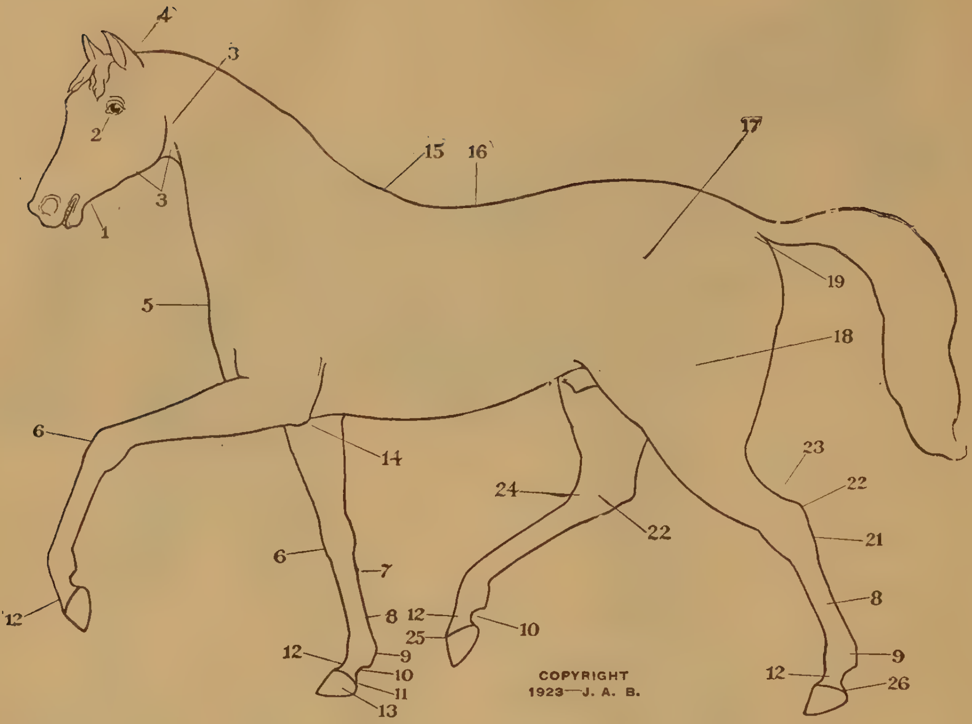
POINTS OF THE HORSE.

The points of the horse will well repay the effort of committing to memory by any one who wishes to be a good judge of a horse. For through a knowledge of their values it is possible to say by simply looking over an animal, while he is standing, for what kind of work he is best adapted and, to some extent, how good he may be in his class.

Plate I.

1. Poll. 2. Forelock. 3. Ear. 4. Forehead. 5. Face. 6. Nostril.
7. Upper lip. 8. Under lip. These two together form the muzzle.
9. Under jaw. 10. Jowl. 11. Throttle. 12. The windpipe.
13. The crest. 14. The withers. 15. The back. 16. The coupling or loins.
17. Summit of the croup. 18–19. The girth. 20. The croup.
21. The dock or root of the tail. 22. The whirl-bone, or hip-joint.
23. The quarters. 24. The flank. 25. The sheath.
26. The barrel. This is composed of the chest in front and lying under the ribs, and the belly or abdomen lying behind the ribs and extending to the flank.
27. The shoulder. 28. The point of the shoulder.
29. The counter or breast. This extends from side to side across the front of the animal.
30. The elbow. The parts lying between numbers 28 and 30 constitute the arm.
31. The forearm. 32. The knee. 33. The cannon.
34. The back tendons or cords. 35. The fetlock or large pastern-joint.
36. The pastern. 37. The heel. 38. The coronet. 39. The hoof.
40. The stifle-joint. 41. The gaskin or thigh. 42. The hock. 43. Chestnut.

The further names and locations of the points below the hocks are the same as those given for the front legs.



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PROMINENT ILLS OF THE HORSE.

1. Dead bone in the lower jaw,

2. Cataract. Cloudy outer covering, or the disease of eye.

3. Abscess of salivary glands of throat or under the jaw.

4. Poll evil. Caused by pressure of bridle or other bruise of the part. The swelling may be upon either or both sides of the mane.

5. Swelling or open sore caused by collar pressure. If solid and unopened called "cold abscess." Can't be cut out; treatment difficult; call V. S.

6. Injury to knee from falling.

7. Strain of "check" ligament. Small swelling over back tendon on inside leg; quite sore on pressure.

8. Strain of tendons, lifting foot backward, or of suspensory ligament. The ligament lies between the back tendons and the bone.

9. Inflammation where ligament passes over little bones, just above and behind fetlock-joint. Looks like "windgall," but is much harder when weight of horse is upon the leg.

10. Scratches and grease-heel.

11. Quittor. Also open sore coming from "corn" in the foot; both are open sores discharging more or less pus. A quittor may be caused by tread wound of coronet.

12. Seat of ringbone.

13. Quarter-crack. Begins at hair and moves to ground surface of hoof, on inside.

14. Shoe-ball. Larger or smaller swelling over elbow; may be hard or soft, open or unopen, through skin.

15. Fistula of withers. Larger or smaller swelling to one or other side, or covering the whole top of the spines of the backbone of the part.

16. Hard, smaller or larger swelling directly on top of spines of the backbone

of the part; coming from pressure of riding saddle. It may be more or less tender upon pressure.

17. Gall of the hip. Pin-hipped or flat-hipped, in which more or less of one of the edgebones is broken and a flat appearance given to the part.

18. Tumor on end of cord following certain castrations. Surgical operation for its removal is the only remedy.

19. Rectal fistula. Discharges blood and pus in larger or smaller quantities. Surgical operation only remedy.

20. Capped hock.

21. Seat of curb.

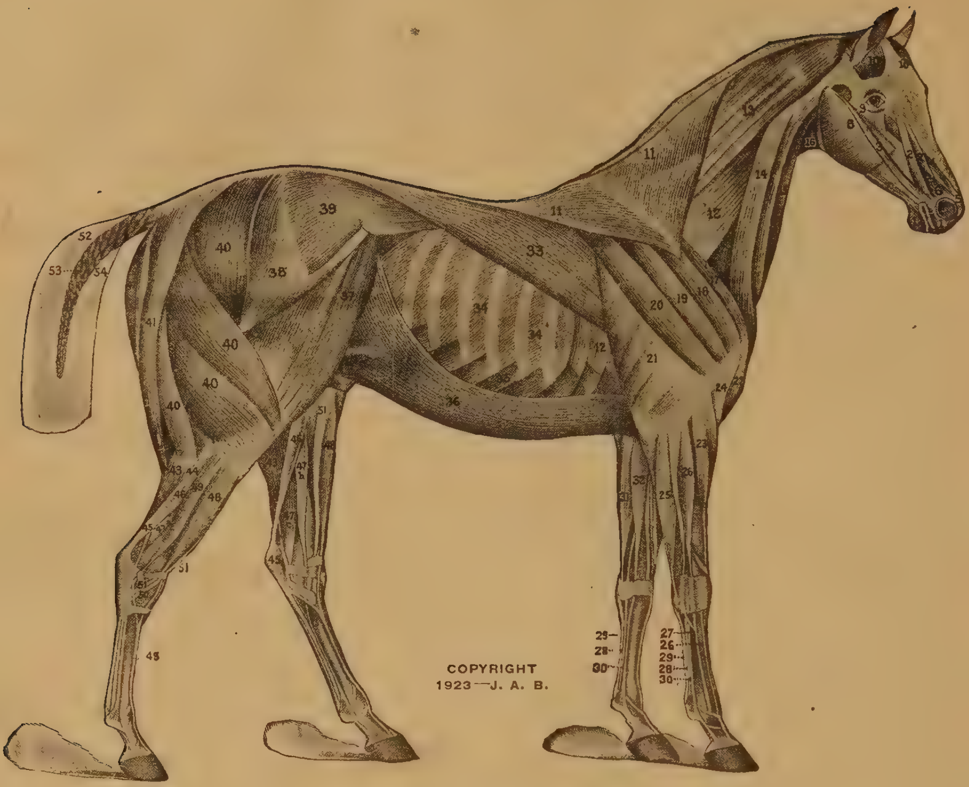
22. Seat of bone spavin.

23. Thoroughpin.

24. Bog spavin.

25. Toe or sand-crack. Directly in the toe of hoof, beginning at hair and extending downward to ground surface of hoof.

26. Trend wound; may result in quittor.



MUSCLES OF THE HORSE.

First. There is a large muscle lying just under the skin, and attached to it, which is called the "panniculus," the action of which is to twitch the skin, as for the purpose of removing insects, etc.

Second. The outer layer of muscles called superficial layer, after that a deeper layer which assists the superficial layer in action. These work together so that if a failure of full and normal action occurs in a given part, some idea may be obtained as to which of the muscles are affected. It is by careful observation only, of the movements of the different parts, while the horse is in slow trotting action, that the seat of lameness can be discovered, oftentimes. As, for instance, to know whether a certain lameness is located in the foot or the shoulder:

1. *Orbicularis Oris.* Compresses the lips, also assists in chewing, drinking, and the gathering of food.
2. *Levator labii superioris aleœque nasi.* Raises the upper lip and angle of the mouth and dilates nostril.
3. *Zygomaticus.* Retracts the angle of the mouth.
4. *Nasalis Longus.* Elevates and wrinkles the upper lip.
5. *Dilator Naris Transversalis.* Dilates the nostrils.
6. *Dilator Naris Lateralis.* Dilates the nostril, acting on its external wing.
7. *Depressor Labii Inferioris.* Depresses the under lip.
8. *Masseter.* Elevates the lower jaw and closes the mouth, important in chewing.
9. *Obicularis Palpebrarum.* Closes the eyelids.
10. *Temporalis.* Assists in closing the mouth, gives good assistance to No. 8 in chewing.

11. *Trapezius, cervicalis and dorsalis.* The first named portion draws the shoulder upward and forward; the second, upward and backward.

12. *Serratus Magnus.* Raises the head when the horse stands still; in action it draws the shoulder-blade down.

13. *Splenius.* One alone is used draws the head to one side; if both are used they raise the head.

14. *Levator Humeri.* When the head is held still it advances the entire limb; if the legs are still and the muscle on one side only is used it draws the head and neck to that side. If both are used together the head and neck are drawn down

15. *Sterno-Maxillaris.* Both acting together brings head downward. One alone acting turns the head downward or to either side.

16. *Sub-Scapulo-Hyoideus.* Its action is to pull the roots of the tongue downward or backward.

17. *Pectoralis Parvus.* Assists in drawing the shoulder-joint backward.

18. *Antea Spinatus.* It serves, as do other muscles of the part, in being an active ligament of the shoulder-joint.

19. *Postea Spinatus.* Helps to draw the arm outward, in progression.

20. *Teres Externus.* When acting with the *teres internus*, lying under it and not shown in the diagram, it bends the shoulder-joint backward. When acting alone pulls the arm outward, helping No. 19.

21. *Triceps Extensor Brachii.* Its action is to advance the forearm.

22. *Pectoralis Magnus* and *Anticus.* Action to draw the shoulder back and the arm towards the body.

23. *Extensor Metacarpi Magnus.* It carries the knee forward.

24. *Humeralis Obliquus.* Flexes the elbow-joint.

25. *Flexor Metacarpi Externus.* It bends (flexes) the knee.

26. *Extensor Pidis.* Extends the small bones just above the hoof upon each other, and helps to extend the knee.

27. *Extensor Suffraginis.* Assists No. 26 in extending the foot.

28 and 29. Tendons of *Flexors Perferans* and *Perforatus.* Their chief action is to flex all joints below the knee.

30. *Suspensory Ligament.* Running from lower bones of the knee, joining the tendon of the *Extensor Pidis.*

31. *Flexor Pidis Perforans* and *Perforatus.* Same as 28 and 29.

32. *Flexor Metacarpi Internus.* Assists No. 25.

33. *Latisimus Dorsi.* In action it elevates the humerus and bends the shoulder-joint backward. When the horse is standing still it helps to force air from the lungs.

34. *Intercostales.* Their action draws air into the lungs.

35. *Obliquus Abdominis Externus.* Help to support the bowels; in action they compress the bowels and assist in defecation, urination and parturition, flex the backbone, and by compressing the belly aid greatly in forcing air out of and into the lungs.

36. *Rectus Abdominis.* Helps to support the contents of the abdominal cavity.

37. *Tensor Fasciæ Latar.* Lifts the thigh-bone upward.

38. *Gluteus Maximus.* Draws the thigh backward and assists in rearing.

39. *Gluteus Externus.* It draws the thigh outward.

40. *Triceps Abductor Femoris.* To draw the thigh backward in action; it assists in rearing.

41–42. *Biceps Rotator Tibialis.* Draws the leg backward and outward.

43. *Gastrocnemius Externus* and *Internus.* Straightens the hocks on the part of the leg, bends the fetlock and pastern joints, and prevents bending of the hock-joint.

44. *Plantaris.* Assists No. 43 very slightly.

45. *Tendo Achilles.* The tendon of No. 43. Passes over point of the hock, and is seat of capped hock.

46. *Flexor Pedis Accussorius.* It assists No. 47.

47. *Flexor Pedis Perforans.* Assists in advancing or bending the hock-joint and bends backwards the fetlock and pastern joints.

47*a*. Lateral division of No. 47.

47*b*. Middle division of No. 47.

47*c*. Large division of No. 47. They all assist No. 47.

48. *Extensor Pedis.* It carries forward the foot and small bones just above it and assists bending the hock-joint.

49. *Peróneus.* It assists No. 48

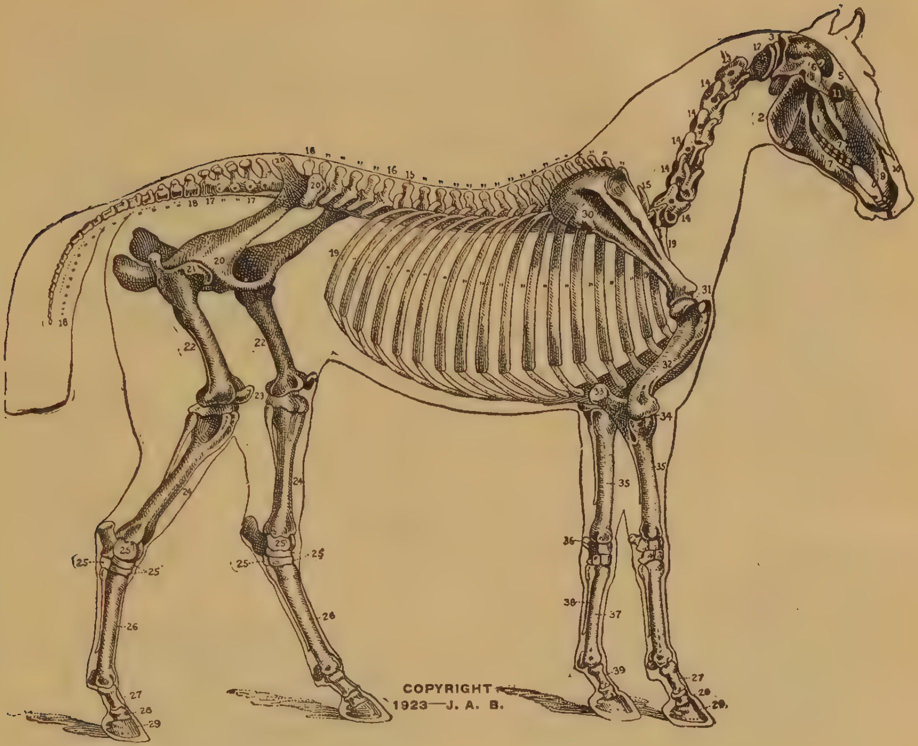
50. *Extensor Pedis Porevis.* It assists slightly in advancing the foot.

51. The tendon of No. 48 through which assistance is given in bending the hock-joint.

52. *Erector Coccygis.* When those on both sides act together the tail is raised up — one alone, upward and to one side or other.

53. *Curvator Coccygis.* To curve the tail and draw it sideways.

54. *Depressor Coccygis.* Acting together bend the tail downward.



SKELETON OF THE HORSE

1. Upper jaw. 2. Lower jaw.

3. Occiput (the high point between the ears).

4–6. Small bones helping to form the bony covering of the brain.

7. Upper and under, back, double, or molar teeth; six in each jaw **on each** side; twenty-four in all.

8. Front teeth or incisors; six in each jaw; twelve in all.

9. Tusks or canine teeth; two in each jaw; four in all. Mares sometimes do not have these teeth. The full mouth of a horse contains forty teeth.

10. The nasal bone.

11. The eye socket or orbital cavity; the bony prominent ridge above this is called the orbital arch; while, through the bone below, the tear duct runs from the eye socket into the nostril.

12. The atlas, the wings of which form the bony ridges, one each side, just behind the ears.

13. The dentata, the second bone of the neck, which has a long projection into a cavity in the atlas. This furnishes the pivot upon which the head turns.

14. The seven remaining fine bones of the neck or vertebræ.

15. Superior spines of the back (dorsum), all of them having "bodies" from which the ribs spring; eighteen in number.

16. Other bones of the back, called lumbar vertebræ, to which the short ribs are attached; six in number.

17. Bones of the back, called the sacrum. This has six segments joined together and giving no flexibility to the parts. Numbers 15–17 make up the backbone.

18. Bones of the tail or coccy.

19. The ribs, eighteen in number, on each side. The first eight, joined almost

directly to the breast-bone, are called true, the last ten, joined to that bone, are called the false ribs.

20. The edge or pelvic bones. This is framework through which the hind limbs are joined to the body. It consists of three different bones on each side, but they are so firmly joined together as to be, practically, one bone. This bone contains the deep sockets into which the large rounded head of the hip-bones enter to form the whirl-bone or hip-joint at Fig. 21.

22. The thigh, hip, or femur bone.

23. The stifle-joint. This is made up of the two large bones, working like a hinge, together with a little bone. The stifle-bone, like the human knee pan, which, placed outside the weight-bearing column, slides up and down to facilitate movement.

24. The leg or gaskin bones (called also the tibia and fibula).

25. The hock or gambrel. This is made up of six small bones. The true or hinge-joint is between the gaskin and shank-bones. The office of the small bones is to glide one upon the other and prevent too much concussion of the part, in action.

26. The shank, cannon, or metatarsal bone, running from the hock down a little way on the outside and inside of each cannon, are called the splint-bones. The small bones shown at the lower end and back of the cannons are not in the weight-bearing column, but are simply used as a fulcrum over which the back tendons glide; they are called sesamoids.

27. The large pastern-bone. 28. The small pastern-bone.

29. The foot or pedal bone; it is entirely contained within the hoof and follows it in shape. Behind this, not in the weight-bearing column, is a small bone running across the foot, not shown in the diagram, called, from its shape, the coffin-bone, also the navicular bone. It is back of the pedal bone, and furnishes a fulcrum over which the back tendon glides.

30. The shoulder-blade or scapular.

31. The shoulder-joint. 32. The arm-bone or humerus.

33. The elbow or ulner runs a part of the way down the forearm and is attached to it.

34. Elbow-joint. 35. The forearm or radius.

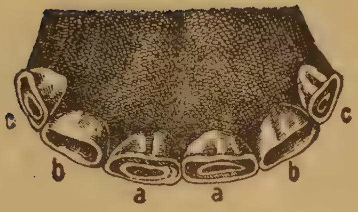
35. The forearm or radius.

36. The knee or carpus, is formed by the lower end of the forearm and seven, or sometimes eight, small bones, and the upper end of the cannons. The small bones have very limited action, but tend largely to overcome the effects of concussion.

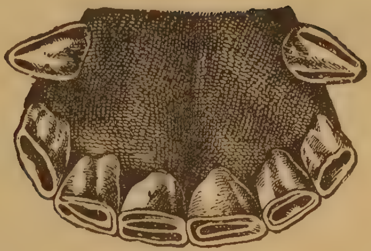
37. Shin or cannon or metacarpal bone.

38. Splint bones. 39. Same as described for hind limbs.

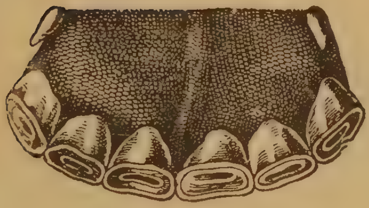
Teeth of the Horse.



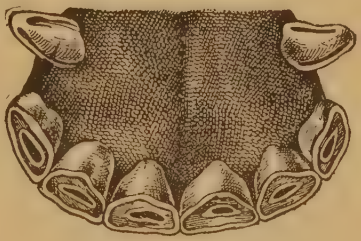
FOUR YEARS OLD.
The nippers, *aa*; permanent teeth, *bb*; end teeth, *cc*, are milk teeth.



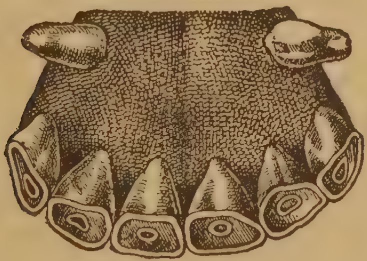
FIVE YEARS OLD.
The teeth have changed.



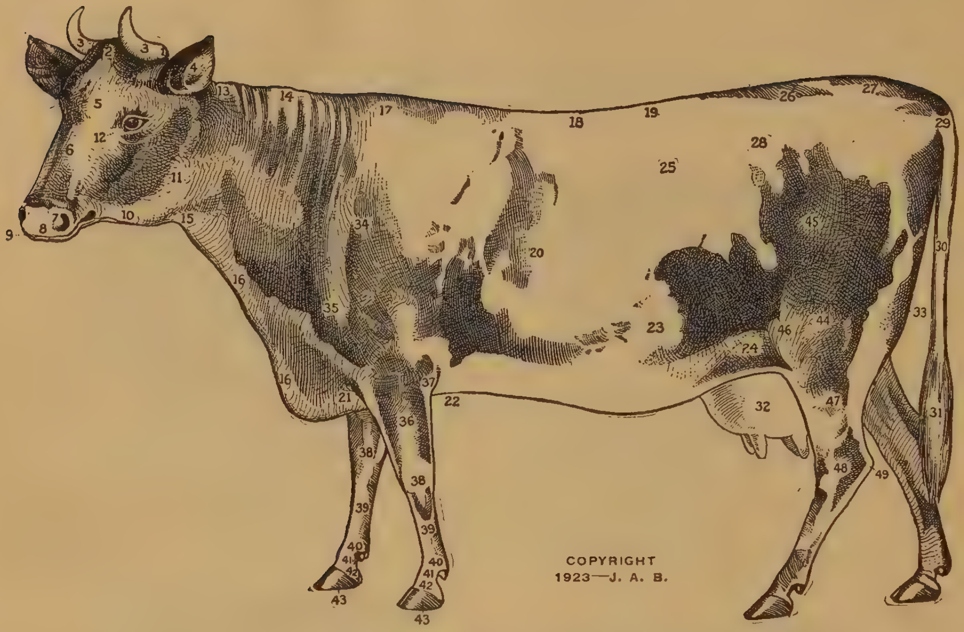
EIGHT YEARS OLD.



TEN YEARS OLD.



FIFTEEN YEARS OLD



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EXTERIOR OF THE COW.

(*With numbers showing the various parts.*)

Head.

1. Back of head.
2. Frontal crest.
3. Horns.
4. Ears.
5. Forehead.
6. Face.
7. Nostrils.
8. Mouth, with upper and lower lips.
9. Chin.
10. Throat.
11. Cheeks.
12. Eyes and eyelids.

Neck.

13, 14. Nape of the neck.
15. Throat. 16. Dewlap.

Trunk.

17. Withers. 18. Back.
19. Loin, or kidney region.
20. Walls of chest. 21, 22. The brisket.
23. Belly. 24. Flanks.
25. Upper part of flank. 26. Rump.
27. Croup. 28. Haunches.
29. Root of tail. 30. Tail. 31. Tuft.
32. Udder, with the teats.
33. The buttock.

Fore Limbs.

34. Shoulder.
35. Point of shoulder. 36. Forearm.
37. Elbow. 38. Knee. 39. Shin.
40. Fetlock-joint, with the dew-claws.
41. Pastern. 42. Coronet. 43. Hoofs.

Hind Limbs.

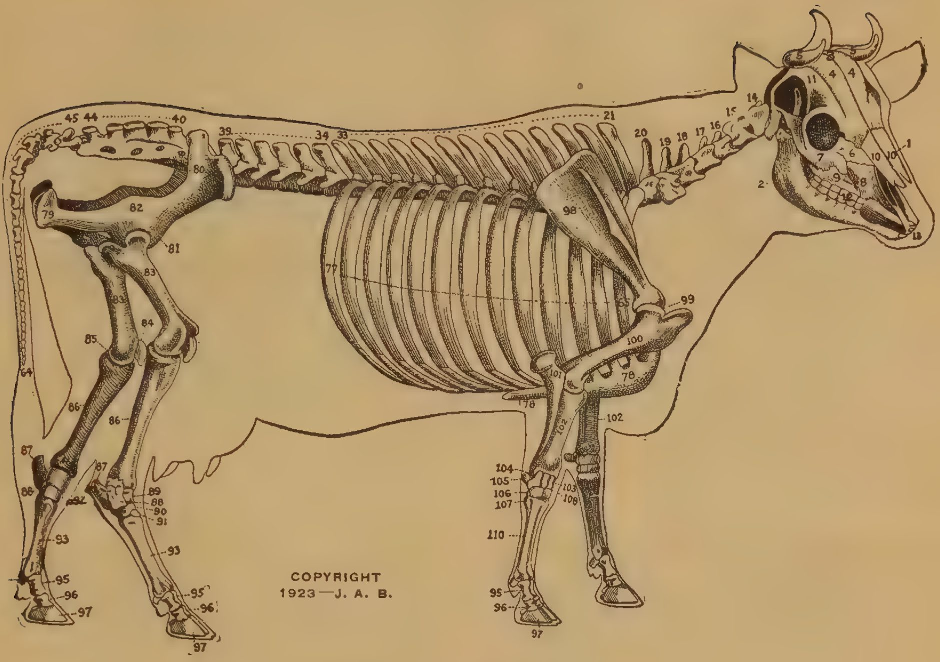
44. Upper thigh. 45. Hip-joint.
46. Stifle-joint. 47 Lower thigh.
48. Hock. 49. Point of hock.
From the hock downwards, the descriptions are the same as in the fore-limbs.

Value of the Various Parts for Beef.

The prime parts of the animal, for beef, are embraced between a line that may be drawn from numbers 34 and 29, thence to 45 and back to 34.

The second best are between 34–45–33–24, 23 and 37.

The ribs below a line drawn from 34 to 45; the flanks 23 to 24, and the thinner parts lying just above a line so drawn and thence to 21 and 16, the brisket, are good corning pieces. Between 45 and 47 are valuable pieces for smoked or dried meat.



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SKELETON OF THE COW.

1. Upper jaw. 2. Under jaw.

3. Occipital bone. This bone helps to form the high ridge between the horns.

4. Frontal bones.

5. The bony horns. The horns themselves fit upon the outside of these; there is also a communication from the inside of the frontal-bone to the inside of the bony horn.

6–11. Small bones going to make up the face and jaw.

12. Upper and under back, double, or molar teeth.

13. Front or incisor teeth. There are six double or back teeth on each side of each jaw, twenty-four in all. The under jaw contains eight front teeth, while there are no upper front teeth in this animal, their places being filled by a heavy gristly or cartilaginous pad against which the under teeth press the food. The mouth contains thirty-two teeth; twenty-four back and eight front.

14–20. The bones of the neck.

21–33. Spines of the first thirteen bones of the back; the dorsal vertebræ. Between each one is a joint, to each of which a rib is attached, allowing the necessary movement of the ribs in breathing.

34–39. Other bones of the back, called lumbar vertebræ, to which the so-called short ribs are attached.

40–44. Other of the backbones, called the lumbar vertebræ, are solidly joined together, allowing no motion between them. The bones 14 to 44 make up the backbone. 45–64. Bones of the tail.

65–77. The ribs. The first eight are called true, the last five false, ribs.

78. Breast-bone or sternum; a rather soft bone to which the prolongations from the ribs are attached.

79. Ischium. 80. Illium. 81. Pubis.

These bones make up the edgebones, the pelvis.

THE LIMBS.

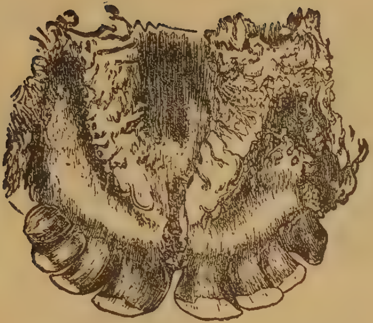
82. Hip-joint. 83. Thigh-bone (femur). 84. Patula 85. Stifle-joint.
86. Leg-bone (tibia). 87. Heel-bone (calcis)

88. Hock-joint 89–92. Small bones of the hock.
93. Shank-bone (metatarsal). 94. Sesamoid. 95. Pastern.
96. Coronet-bone. 97. Hoof-bones (pedal-bone). 98. Shoulder-blade
99. Point of shoulder (shoulder-joint).
100. Arm. 101. Elbow-bone (ulna).
102. Forearm (foreleg — radius).
103. Knee. 104–108. Small bones of the knee-joint.
110. Shank (metacarpal).

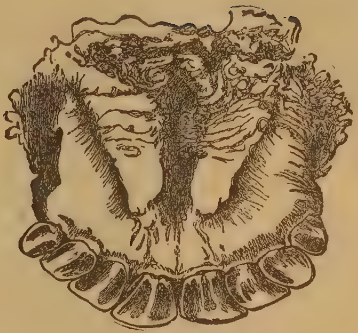
The remaining bones of the fore extremity are named the same as those described for the hind leg and feet.

Fuller descriptions of some of these bones will be found in connection with the description of the bones of the horse; their descriptions and functions being alike.

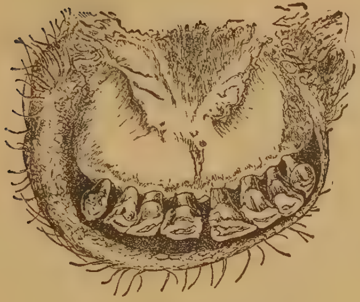
Teeth of the Cow.



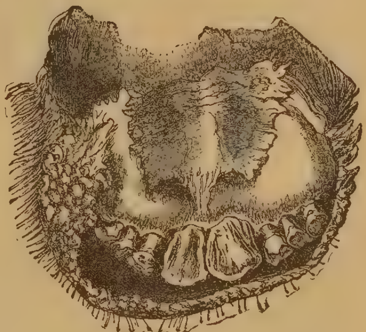
TEETH OF A CALF AT BIRTH.



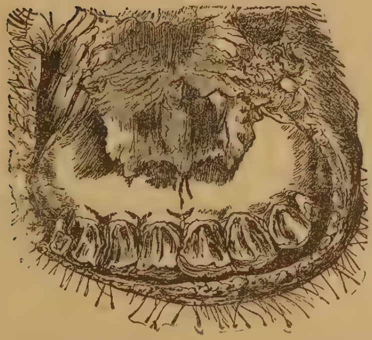
SIX WEEKS OLD.



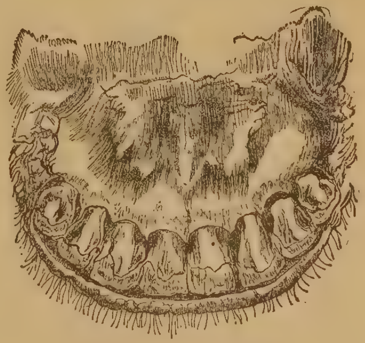
ONE YEAR OLD.



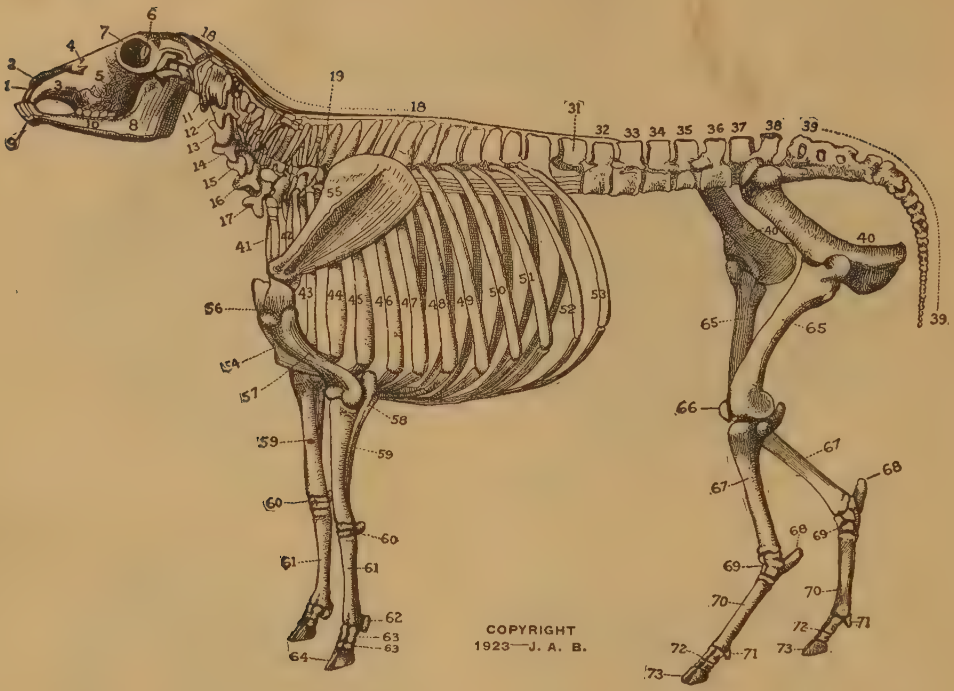
TWO YEARS OLD.



TWO YEARS AND SIX MONTHS OLD.



SIX YEARS OLD.



SKELETON OF THE SHEEP.

1. Intermaxillary bone.
2. Nasal bones.
3. Upper jaw.
4. Union of the nasal and upper jaw-bone.
5. Union of the molar and lachrymal bones.
6. Orbits of the eye.
7. Frontal bone.
8. The lower jaw.
9. Incisor teeth, or nippers.
10. Molars, or grinders.

11—17. The seven vertebræ, or bones of the neck.

18—18. The ligament of the neck, supporting the nead.

19—31. The thirteen vertebræ, or bones of the back.

32—37. The six vertebræ of the loins.

38. The sacral bone.

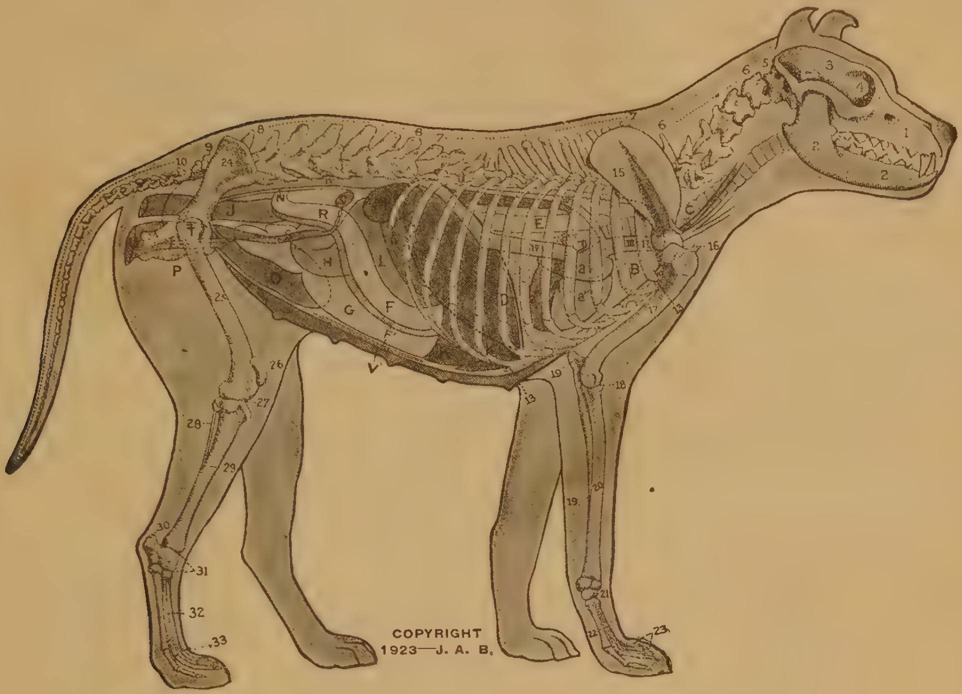
39—39. The bones of the tail, varying in different breeds from twelve to twenty-one.

40. The haunch and pelvis.

41—48. The eight true ribs, with their cartilages.

49—53. The five false ribs, or those that are not attached to the breast-bone.

54. Breast-bone.
55. Shoulder-blade.
56. Shoulder-joint.
57. Arm.
58. Elbow-bone (ulna).
59. Bone of the forearm (radius).
60. Knee, with its different bones.
61. Metacarpal, or shank bones.
62. One of the sesamoid bones.
63. Two first bones of the foot (the pasterns).
64. Hoof-bones (pedal bones).
65. Thigh-bone.
66. Patella, or stifle-joint.
67. Leg-bone (tibia).
68. Point of the hock.
69. Other bones of the hock.
70. Metatarsal (shank-bone).
71. One of the sesamoid bones.
72. Two first bones of the foot (the pasterns).
73. Hoof bones (pedal bones).



SKELETON AND INTERNAL ORGANS OF THE FEMALE DOG.

1. Upper jaw.
2–2. Under jaw.
3. Bones of the cranium.
4. Bones of the eye socket.
5. Atlas, or first bone of the neck.
6–6. Other bones of the neck (cervical vertebræ).
7–7. Dorsal vertebræ.
8–8. Lumbar vertebræ.
9. Sacral vertebræ.

(7–9: All of these together constitute the "backbone.")

10–10. Bones of the tail (coccygeal vertebræ).
11–11. True ribs.
12. "False rib," so called because it is not connected with the breast-bone.
13–13. Breast-bone (sternum).
14–14. "Short ribs" (transverse process of lumbar vertebræ).
15. Shoulder-blade (scapular).
16. Shoulder-joint.
17. Arm-bone (humerus).
18. Elbow-joint.
19–19. Small bone of the arm and point of the elbow (ulna).
20. Bone of forearm (radius).
21. Wrist.
22. Metacarpal bones.
23. Bones of the toes (phalangeals).
24. Edge or pelvic bones. Three in number on each side; all six are firmly joined together and the sockets of the hip-joints are contained in them, at 24′.
25. Thigh-bone (femur).
26. Stifle-bone (patilla).
27. Stifle-joint.
28. Small bone of the leg (fibula).
29. Leg-bone (tibia).
30. Point of the hock (os calcis).
31. Hock-joint (several small bones enter into its formation).
32. Metatarsal bone.
33. Bones of the toes (phalangeals).

A. Heart. B. Right lung. C. Trachea, or windpipe. D. Diaphragm. E. Canal from pharynx to the stomach. F and G. Small intestines. H. Pouch at head of large intestines. J. Rectum. K. Liver. L. Pancreas. M. Right kidney. N. Tube carrying urine from kidney to bladder. O. Bladder. P. Excretory canal of the bladder. Q. Right ovary. R. Right Fallopian tube. S. Womb. T. Vagina. U. Vulva. V. Udder.

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PRONOUNCING DICTIONARY.—GLOSSARY.

Ab-do'men. The belly.

A-ce-tab'u-lum. The socket for the head of the thigh bone.

Ab-dom'i-nal cav'i-ty. The cavity of the belly.

Ab-duc'tor. A muscle which draws one part of the body towards another.

Ab-sor'bents. Glands and vessels which absorb or suck up substances from within or without; also, medicines which, though nearly or quite inactive themselves, absorb, or combine with acid matter in the stomach or bowels.

A-cro'mi-on. That part of the scapula, or shoulder-blade, which unites with the collarbone.

Al-bu-gin'e-a. The white of the eye.

Al'ter-a-tives. Medicines which gradually reëstablish health, without sensibly increasing the circulation, or augmenting the perspiration, urine, or other excretions.

Al've-o-lar. Relating to the sockets of the teeth.

Al'vine (*Al'vin*). Relating to the intestines, as *alvine discharges*,—discharges from the bowels.

A-mor'phous. Having no regular form.

Am-ni-ot'ic liq'uid. The fluid surrounding the fetus in the womb.

An-æs-the'sia. Suspended sensibility.

An-as'to-mose. The uniting of arteries and veins by joining their mouths.

An-chy-lo'sis. A stiff or useless joint.

An-i-mal'cu-læ. Animals so small that they can only be seen with a microscope.

An-æ'mi-a. Privation of blood; a comparatively bloodless state.

An'o-dynes. Medicines which diminish sensibility, abate pain, and induce sleep. It should always be remembered that anodynes when frequently, and long taken, lose their influence in disease.

Ant-a'cids. Preparations which neutralize acidity of the stomach and bowels.

Ant-al'ka-lies. Agents which neutralize alkalies.

An-ta-phro-dis'i-acs. Agents which lessen or blunt the sexual propensities.

An-thel-min'tics. Medicines which destroy and expel worms.

An'ti-dotes. Medicines which counteract and destroy the effects of poison.

An-ti-pe-ri-od'ics. Medicines which prevent or cure diseases of a periodical character.

An-ti-phlo-gis'tics. Medicines or diet which remove or appease inflammation.

An-ti-spas-mod'ics. Medicines which prevent or allay spasms, commonly called cramps.

An-ti-syph-i-lit'ics. Medicines which cure syphilis.

An-ti-sep'ti . Whatever checks or counteracts putrefaction.

An-ti-scor-bu'tics. Articles which prevent and cure scurvy.

A-pe'ri-ents. Medicines which gently open the bowels.

A-pho'ni-a. A loss of the voice.

Aph-ro-dis'i-acs. Medicines supposed to excite and promote the sexual appetite.

A-pon-eu-ro'sis. The membranous expansion of tendons and muscles.

A-re-o'la. A colored circle, as the circle around the nipple.

Ar-o-mat'ics. Medicines which have a grateful, spicy smell, and an agreeable, pungent taste.

As-phyx'i-a. Suspended animation; apparent death.

As-then'ic. Relating to debility; or to disease marked by debility.

As-trin'gents. Medicines which have the power to constringe or pucker up the tissues of the body, and thereby check discharges.

At'ro-phy. A wasted condition; leanness.

Ax-il'la. The arm-pit.

Aus-cul-ta'tion. The art of detecting disease by listening to the sounds of the lungs, heart, etc.

Au-top'sy. Personal inspection,—used in the sense of a post-mortem examination.

A-zo'te. Nitrogen; one of the constituents of the atmosphere.

Bron'chi-a. The pipes which convey the air through the lungs.

Bur'sæ mu-co'sa. Small sacs, situated under tendons, about the joints, containing a sticky fluid.

Cal'cu-lus. A solid, unorganized body formed in the kidneys, or bladder, and called a stone. The plural is *calculi.*

Cap'il-la-ry. Small, resembling a hair.

Cap'sule. A membranous bag, enclosing a part.

Car'ti-lage. Gristle attached to the ends of the bones.

Car-min'a-tives. Medicines which expel wind from the stomach and bowels, and allay the pain caused by it.

Ca-thar'tics. Medicines which purge the bowels.

Cer'vix. The neck. *Cer'vix U'ter-i.* The neck of the womb.

Car'di-ac. Relating to the heart.

Car'pal. Relating to the wrist.

Cat-a-me'ni-a. The monthly flow of females.

Ca-thar'sis. Purging.

Cath'e-ter. A tube for drawing off the urine.

Cel-lu'lar. Relating to cells.

Cer'e-bral. Relating to the brain.

Cha-lyb'e-ate. Containing iron or steel.

Che-mo'sis. A swelling of the eye, in which the eye projects, with a depression in the centre.

Cho'la-gogue. A medicine which causes a discharge of bile.

Clo'nic spasms. Spasms which are rigid and relaxed alternately.

Col-li'qua-tive. This term is applied to excessive and exhausting discharges.

Co-los'trum. The first secretion of milk.

Co'ma. Profound stupor, or sleep.

Con'dyle (kon'dil). A knob; applied to certain projections of bones at joints.

Con'flu-ent. Not distinct; running together.

Con-gen'i-tal. Existing at the time of birth.

Con-ges'tion. Distention of parts by an accumulation of blood in them.

Con-junc'ti-va. The membrane which covers the eye and lines the eyelid.

Con'tra-in'di-ca-ted. Not indicated; the opposite implied.

Cord'ials. Medicines which have a grateful, warming and exhilarating effect upon the stomach.

Coun'ter-ir'ri-tants. Articles which by irritating one part, withdraw blood from, and relieve another.

Cri'sis. The turning point of a disease.

Cu'ti-cle. The epidermis; the scarf-skin

De-cid'u-a. A thin, external membrane, within the womb, thrown off after child-bearing.

De-liq'ui-um. Fainting.

De-mul'cents. Medicines of a softening nature, which correct acrid conditions, and, by their bland effects, soothe inflamed and irritated parts.

De-ple'tion. Diminishing the fullness of a part or parts, as by purgatives, or bleeding.

De-squa-ma'tion. Separation of the skin in scales; scaling off.

De-ter'gents. Medicines which cleanse.

Di-ag-no'sis. The art of determining the nature of diseases.

Di-a-pho-ret'ics. Medicines which promote sweating.

Di-ath'e-sis. Any particular disposition, state, or habit of body.

Di-u-re'sis. Copious flow of urine.

Dil'u-ents. Watery drinks, which increase the fluidity of the blood, and render several of the secretive and excretive fluids less viscid.

Dis-cu'tients. Medicines which scatter, resolve, or disperse tumors.

Dis-in-fec'tants. Articles which purify or cleanse infected places.

Di-u-ret'ics. Medicines which increase urinary secretions.

Dras'tics. Strong and violent purgatives.

Dysp-nœ'a. Difficulty of breathing.

E-me'sis. Vomiting.

E-met'ics. Medicines which cause the stomach to reverse its action, and throw its contents up through the mouth.

Em-men'a-gogues. Medicines supposed to have the power of exciting or increasing the menses.

E-mol'lients. Those substances which have the power of softening or relaxing the animal fibre, when applied externally.

En-dem'ic dis-eas'es. Diseases prevailing in certain localities or districts.

Ep-i-dem'ic dis-eas'es. Diseases extending over a large extent of country.

Ep-i-glot'tis. The cartilage, which, in the act of swallowing, shuts down upon the top of the wind-pipe, and prevents food from going into the breath-passage.

Ep-is-pas'tics. Substances which inflame the skin, and raise the cuticle, and cause what is called a blister.

Es-cha-rot'ics. Articles which burn, corrode, disorganize, and destroy the animal tissues, causing what is called an eschar, or slough, which is dead matter, and falls off.

Ex-pec'to-rants. Articles which act upon the system, so as to make the discharge of mucus and other substances from the air-tubes more easy.

Er'rhines. Substances which cause sneezing and a discharge of mucus from the nose when snuffed.

Es'char. The dead part, killed by caustic or mortification, which falls off; a slough.

Ex-fo-li-a'tion. A scaling off, as a piece of dead bone.

Fau'ces. The back part of the mouth.

Fe'brile. Belonging to fever.

Fe'ces. The matter discharged from the bowels.

Feb'ri-fu-ges. Medicines which assuage or remove fevers.

Fla'tus. Wind, or rather, gas, in the stomach or bowels.

Fol'li-cle. A little bag or sac.

Fo-ra'men. A hole or opening.

For-mi-ca'tion. A sensation like the creeping of ants.

Fur-fu-ra'ceous. Branny or scaly.

Gang'li-on. An enlargement in the course of a nerve.

Gan'grene. Mortification; partial death.

Gas'tric. Belonging to the stomach.

Ges-ta'tion. The period of pregnancy.

Glot'tis. The opening into the windpipe, covered by the epiglottis.

Gran'u-lar. Like small grains.

Gran'u-la-ted. Covered with granulations.

Gran-u-la'tion. The filling up or covering of a wound or ulcer, with small, red elevations, looking like grains.

Hæ-mop'ty-sis. Raising blood from the lungs.

Hæm'or-rhage. A flow of blood.

Hæm-or-rha'gic. Having a tendency to bleed.

He-mi-cra'ni-a. Pain on one side of the head.

He-pat'ic. Belonging to the liver.

Hy-per-ca-thar'sis. Excessive purging.

Hy-per'tro-phy. An unnatural enlargement of an organ, without change of structure.

Hyp-not'ics. Medicines which cause sleep.

Ich'or (*Ik'or*). A thin, watery, and acrid discharge.

In-ter-cos'tal. Between the ribs.

Lar'ynx. The top of the windpipe; the cavity which contains the vocal ligaments.

Lax'a-tives. Medicines which render the bowels a little more relaxed than natural, but do not purge.

Lig'ate. To secure with a ligature.

Lig'a-ture. A cord or thread.

Lo'chi-a. The bloody discharge from the womb for some time after childbirth.

Lo'chi-al. Relating to the lochia.

Lymph. A whitish fluid contained by the lymphatic vessels.

Lym-phat'ics. The vessels which carry lymph.

Mac-er-a'tion. The act of softening or soaking a thing by letting it stand in water.

Mac'u-læ. Colored spots; blemishes.

Ma-la'ri-a. Noxious gases from decomposed matter.

Mam'ma. The female breast.

Man-dib'u-lar. Relating to the jaw.

Mas-ti-ca'tion. The act of chewing.

Mas-tur-ba'tion. The act of exciting the genital organs with the hands.

Men'stru-um. Any solvent, or vehicle.

Met-a-car'pus. The hand, between the wrist and the fingers.

Me-tas'ta-sis. The changing of a disease from one place to another.

Met-a-tar'sus. That part of the foot between the ankle and the toes.

Mi-as-mat'ic. Partaking of the nature of miasm.

Mu'co-pu'ri-form. Composed of both mucus and pus.

Mu'co-se'ro-lent. Composed of both mucus and serum.

Nar-cot'ics. Medicines which relieve pain and produce sleep.

Nau'se-ants. Medicines which cause sickness at the stomach, or a disposition to vomit. They are often used as expectorants.

Nos-ol'o-gist (*Nose-ol'o-gist*). One who explains and classifies diseases.

Nu'cle-us. A central spot.

Nu-cle-o'lus. A spot within a nucleus.

Or-thop-nœ'a. Great difficulty of breathing.

Os-si-fi-ca'tion. The formation of bone.

Os u'ter-i. The mouth of the womb.

O'va. Eggs.

O'vum. An egg.

Pa-pil'la. A red, elevated point upon the tongue, or elsewhere. Certain diseases make these points more prominent.

Par-a-cen-te'sis. The operation of puncturing the chest, or the abdomen, for the purpose of drawing off water.

Par-a-phle'gi-a. Paralysis of the lower half of the body.

Par'ox-ysm. A fit of disease taking place periodically.

Par-tu'ri-ent. Bringing forth, or giving birth.

Par-tu'ri-ents. Medicines which promote child-bed labor, by causing contractions of the womb.

Par-tu-ri'tion. Child-birth.

Pec'to-rals. Medicines intended to cure or relieve diseases of the chest.

Pel′vis. The bony cavity, or basin, at the lower part of the body, containing the womb, abdomen, rectum, etc.

Per-i-ne′um. The part, or space, between the anus and testicles.

Per-i-os′te-um. A thin, hard membrane, covering the bones.

Per-i-os-ti′tis. Inflammation of the periosteum.

Per-i-to-ne′um. A serous membrane lining the cavity of the belly, and folded over most of the organs contained in it.

Pet-e′chi-æ. Purple spots which appear upon the skin in low fevers, looking like flea-bites; called also ecchymoses.

Pha-ge-den′ic. Corroding, eating,—applied to ulcers.

Pha-lan′ges. The bones of the fingers and toes.

Phar′ynx. The upper part of the throat.

Phleg-mo′nous in-flam-ma′tion. Inflammation marked by redness, heat, and pain, and a tendency to form matter.

Prog-no′sis. The art of foretelling the termination of diseases.

Pty′a-lism. Salivation.

Pri′a-pism. A continued erection of the penis from exciting, morbid causes.

Re-frig′er-ants. Medicines which lessen the heat of the body.

Re-lax′ants. Medicines which relax the tension of the muscles.

Re-mis′sion. A lessening or mitigation of the severity of the symptoms of a disease.

Res-o-lu′tion. Dispersion of an inflammation before pus is formed.

Re-vul′sives. Medicines or appliances which remove a disease by causing a determination to some other part.

Ru-be-fa′cients. Applications which excite the skin, causing the blood to flow to it, and making it red.

Sa′nies. A thin fluid discharged from ulcers, having some of the properties of pus and blood.

Sed′a-tives. Medicines which diminish the action of the heart and nerves, and which are used when we wish to allay any excited action in the system.

Se′rous. Watery.

Scro′tum. The bag which contains the testicles.

Scyb′a-la. Hard, round lumps in the feces.

Si′a-la-gogues. Medicines which increase the flow of saliva.

Slough (*Sluff*). Any part of the body killed by mortification, or caustic, and cast off.

Sper-mat′ic cords. Two cords, composed of nerves, veins, and arteries, descending, one on each side, from the abdomen into the scrotum, and suspending the testicles.

Squa′mous. Scaly; having scales.

Sor′des. The dark matter deposited upon the lips and teeth, in low fevers.

Ster′num. The breast-bone.

Ster′tor. Noisy breathing, as in apoplexy. Snoring.

Ster′tor-ous. Snoring and noisy, as applied to breathing.

Stim′u-lants. Medicines which increase the activity of the system.

Sto-mach′ics. Medicines which support and renovate the stomach, making its action healthy.

Stru′ma. Scrofula.

Styp′tics. Substances which, when applied externally, have the power to constringe or pucker up bleeding vessels, and stop the loss of blood.

Sub-cu-ta′ne-ous. Under the skin.

Sub-max′il-la-ry. Under the lower jaw.

Sub-sul′tus ten′di-num. Slight twitchings of the tendons, which occur in low forms of fever.

Su-do-rif′ics. Medicines which cause a flow of perspiration, rather more free than that produced by diaphoretics.

Sup-pos′i-to-ries. Solid medicinal substances, of a conical or cylindrical shape, which are placed in the rectum for the purpose of relieving constipation and the piles, and for removing stricture.

Syn′co-pe. Fainting; swooning.

Te-nes′mus. A painful bearing down in the lower bowel, and a distressing desire to go to stool.

Ton′ics. Medicines which gradually give tone and strength to weakened organs, or to the whole system. Some act upon the nervous system, and some upon the other tissues, by condensing, hardening, and invigorating them.

Tor′mi-na. Griping pain.

U-re′ters. The tubes which convey the urine from the kidneys to the bladder.

U-re′thra. The canal which conveys the urine from the bladder out of the body.

U′ter-us. The womb.

Vag′i-na (*Vadg′i-na*). The passage from the external genital organs to the womb.

Va′ri-cose veins. Veins which are morbidly enlarged, and present along their course soft, knotty, purplish tumors.

Ver′ti-go. Dizziness; giddiness.

Ve-si-ca′tion. Blistering.

Vi′rus. Poison; contagion.

Vis′cus. A liver, stomach, kidney, heart, or any organ within one of the cavities of the body.

GENERAL INDEX.

A

Abdominal Cavity 122
  Diseases of 324
Abortion 464
Abscesses 580
  Of the brain 191
  Mammary 477
Acetozone 1136
Accidents 560–568
  From noxious vapors 560
  From burning charcoal 560
  From lightning 563
  From hanging 563
  From clothes catching fire 563
  By drowning, what to do 563, 1146A
  By electricity, what to do 1146A
  By poisoning and antidotes 564
  By mineral poisoning 565
  By vegetable and other poisons 566
  Machinery and railroad, what to do 1146
  To recover persons apparently drowned 560–562
  How to lift injured and sick 568
  What to do in case of 1143
Acidity of Stomach 336
Acids, acetic, citric 987
  Benzoic 993
  Hydrochloric, hydrocyanic 987
  Nitric, nitro-muriatic, sulphuric 987
  Tannic, tartaric 988
  Poisoning by 566
Acne 177
Aconite 1029
  Tincture of 1087
  Poisoning by 566
Adenoid Growths 240, 257
Adrenalin Chloride 1136
Ague, brow 231
  Cake 523
  Fever and 521
  Root 1053
Air and Ventilation 117
Air, deep breathing of 117
  In sick rooms 119
  In chest 290
  Supply of 120
  Swellings 354
Air-Cells and Vesicles 40
  Enlargement of 288
Albumen 17
Albuminuria 371
  Dieting in 974
Alcohol, medical properties of 988
Alimentary tubes 36
Aliments, fluid 943
Almonds 988
  Mixture 1072
  Syrup of 1083
Aloes 988
  Comp. tincture of 1089
  And Canella, comp. powder of 1081
Alteratives 1106
Alum 988
Amaurosis 648
Ambrine 657
Amenorrhoea, prescription for. 430, 1133
Ammonia, aromatic spirits of 990
  Carbonate of 990
  Comp. liniment of 1070
  Muriate of 990
  Poisoning by 565
  Sol. of Acetate of 990
  Urate of 385
  Water of 989
Anæmia 320, 511
  Pernicious 512
Anæsthetics 661
Anasarca 391
Anatomy 16
  Of the body 16–20
  Of the bones 20–29
  Of the muscles 29–34
  Of the teeth 34, 35
  Of the digestive organs 35–39
  Of the urinary system 39
  Of the respiratory organs 40
  Of the organs of circulation 41–43
  Of the absorbent vessels 44
  Of the organs of secretion 45
  Of the vocal organs 46
  Of the skin 47–49
  Of the nervous system 49–54
  Of the organs of sight 54–56
  Of the organs of hearing 56, 57
Anchylosis 629
Aneurisms 634
Anger 81
Angina Pectoris 321
  Diet in 950
Anidrosis 176
Anise 990
Ankle, dislocation of 624
Anodynes 1108
Anthrax 588

Antidotes of Poisons....... 564, 1096
Antiphlogistin................. 1136
Antimony, poisoning by......... 565
Antipathies.................... 934
Antiseptic Dressings........ 468, 596
Antiseptics................ 473, 1139
Antispasmodics................. 1106
Antitoxins..................... 573
Aorta.......................... 42
Aperient, Metauer's............ 1073
Apoplexy of the aged........ 202, 557
  Pulmonary.................... 290
Apothecary's Weights and Measures................ 984, 985
Appendicitis................... 349
  Turpentine for............... 140
  Remedy for................... 1134A
Apple Water.................... 957
Aptha Communis................. 539
Apthae......................... 497
Aqueous, the................... 55
Arachnitis..................... 189
Arachnoid...................... 50
  Inflammation of.............. 189
Arm, fractures of.............. 607
Aromatic Confection............ 1066
  Powder....................... 907
  Spirits of ammonia........... 990
Arrowroot...................... 991
Arsenic, poisoning by.......... 565
Arteries....................... 42
  Compression of............... 655
  Hardening of................. 671
Ascites........................ 389
Aseptic and Septic............. 573
Asiatic Cholera................ 362
Asphyxia....................... 560
Assafoetida.................... 991
  Comp. tincture of............ 916
Asthma......................... 301
  Remedy for.... 1133, 1134A, 1136
  Of the aged.................. 557
  Diet in...................... 950
Astringents................ 594, 1110
Atmosphere, pressure of........ 117
Attendants, unhired............ 933
Auricles................... 41, 306
Auscultation................... 260

B

Backache....................... 142
Bacteriology................... 512
Bacteria, classes of........... 268
Bacterial Invasion............. 267
Baldness....................... 185
Balm........................... 991
  Of Gilead.................... 991
Balmony........................ 991
Balsam-Copaiba................. 991
  Tolu......................... 992
Bandages, how to put on..674, 1146G
  Wet.......................... 903
Barberry....................... 992
Barber's Itch.................. 178
  Remedy for................... 1134A
Bark, when to gather........... 982
Barley......................... 85
  Coffee....................... 955
  Water........................ 954
Barrenness..................... 455
Basilicon Ointment............. 1066
Bathing........................ 975
  And cleanliness.............. 110
Baths, division of............. 894
  As a purifier................ 112
  Cataract..................... 909
  Cold.................... 114, 895
    Effects of cold............ 896
  Cold foot.................... 915
  Cold affusion................ 115
  Douche....................... 909
  During pregnancy............. 902
  Eye and ear.................. 916
  Half......................... 910
  Head......................... 912
  Hose......................... 909
  Hot.......................... 896
    Effects of hot............. 898
  Leg.......................... 912
  Mouth or oral................ 917
  Nose......................... 916
  Number and character of...... 112
  Pail douche.................. 910
  Reaction of.................. 116
  Restoration of, desirable.... 116
  Roman................... 112, 976
  Russian...................... 976
  Sea.......................... 898
  Shower.................. 115, 909
  Sitz......................... 912
  Tepid........................ 896
    Effects of tepid........... 897
  Towel and sponge........ 114, 914
  Turkish...................... 976
  Vapor........................ 896
  Warm......................... 115
    Effects of warm............ 897
  Wading foot.................. 915
  Warm foot.................... 916
  Washdown..................... 914
  Washtub...................... 931
  Wave or sluice............... 901
Bayberry....................... 992
  Ointment..................... 1074
Beans...................... 78, 87
Bearberry...................... 992
Beds and bedding.......... 105, 922
Bedbugs........................ 182
Bedsores....................... 938
Beef, essence of....... 958, 962, 1140
  Galls........................ 992
  Tea..................... 958, 962
Beets............... 87, 1098, 1134
Belladonna Ointment............ 1074
  Plaster...................... 1077
  Poisoning by................. 567
Belly, dropsy of............... 389
  Symptoms affecting........... 128

- Belly-ache.................... 353
- Benzoic Acid.................. 993
  - Comp. tincture of.......... 1090
- Bethroot...................... 993
- Bile, on stomach.............. 72
- Biliary Calculi............... 332
- Biliousness, prescription for..... 1137
- Birthmarks.................... 508A
- Bismuth....................... 994
- Bites of insects and snakes...... 599
  - Of mosquitoes or insects.... 599
  - Lemons for................ 1096
- Bitter Root................... 993
  - Sweet..................... 994
- Black Alder................... 994
- Blackberry............... 994, 1097
- Black Cohosh.................. 995
  - Comp. tincture of.......... 1090
- Blackheads.................... 177
- Black Root.................... 995
  - Willow.................... 995
- Bladder....................... 39
  - Acute inflammation of...... 368
  - Chronic inflammation of.... 369
  - Stone in............... 378, 387
  - Acetozone for............. 1136
- Bleeding, what to do in case of.. 1146E
- Bleuorrhagia.................. 404
- Blistering Plaster............ 1066
- Blood......................... 510
  - Buffy coat of.............. 577
  - Composition of, human...277, 510
  - In scrotum................ 636
  - Need of good supply of.....64, 66
  - Poisoning..............474, 1130
  - Pressure.................. 62
  - To stop flow of............ 658

- Bloodroot..................... 995
- Bloody Flux................... 363
- Blue Cohosh................... 996
  - Comp. tincture of.......... 1090
- Blue Disease.................. 507
  - Flag...................... 996
  - Pill...................... 997
- Bodily Injury, what to do in case of.................. 1145
- Body, structure of............ 16
  - Chemical properties of...... 16
  - Paralysis of one side of..... 206
  - Paralysis of lower part of... 206
  - Physical properties of...... 18
  - Stature and weight of...... 135
  - Temperature of............ 138
  - Temperature of, symptoms indicated by............ 138
  - Vital properties of......... 20
  - Wonders of............... 14A
- Boils......................... 587
- Bone's Bitters................ 1092
- Bones and Muscles............ 122
- Bones, anatomy of............ 20
  - Broken, how they unite..... 603
  - Broken, what to do for.... 1146B
  - Death of.................. 626
  - Diseases of................ 625
  - Of the head............... 22
  - Of the trunk.............. 23
  - Of the upper extremities.... 25
  - Of the lower extremities.... 26
  - Time required for uniting... 604
  - Ulceration of.............. 625
  - Unnatural growth of....... 626
  - Uses of.................. 29
- Boneset (Thoroughwort)........ 997
- Borax........................ 1050
- Bowel, falling of.............. 505
  - Construction or stricture of . 351
- Bowels, affections of.........142, 951
  - Acute inflammation of...... 347
  - Chronic inflammation of.... 348
  - Looseness of.............. 360
  - Looseness of, in infants..... 503
  - Prescription for weakened state of, in Diarrhoea..... 1132
- Brachial Plexus............... 52
- Brain.....................49, 122
  - Abscess and suppuration of . 191
  - Diet in affections of........ 949
  - And nerves, diseases of..... 188
  - Dropsy of................. 200
  - Enlargement (hypertrophy) of 197
  - Exercise of...............65, 66
  - Fever of.................. 189
  - Health of................. 59
  - Induration................ 312
  - Inflammation of........... 189
  - Need of a healthy.......... 64
  - Overworking of, in childhood 66
  - Shrinking or atrophy of..... 198
  - Softening of............... 190
  - Tumors of................ 191
- Bran, decoction of............ 954
- Brandy Mixture............... 1073
- Bread, Franklin Mills.......... 961
  - Germ wheat............... 961
- Breast, broken................ 477
  - Inflammation of........... 477
  - Prescription for............ 479B
- Breathing, deep............... 117
  - Difficulty in............... 937
  - Murmurs.................. 263
  - Objects of................. 118
  - Symptoms affecting........ 129
- Bright's Disease of the Kidneys . 371
  - Simple home remedy for.... 1133
- Bronchial Flux................ 556
  - Tubes.................... 40
- Bronchitis.................... 237
  - Acute.................... 285
  - Chronic................... 287
  - Simple home remedy for.... 1133
- Bronchocele.................. 635
- Broncho, pneumonia........... 300
- Bronchorrhea................. 556
- Broths, clam.................. 962
  - Mutton................... 962
- Brown Tail Moth.............. 186

- **Bruises** 624
- **Bubo** 395, 404
- **Bubonic Plague** 544
- **Buchu** 997
  - Tincture of 1088
- **Buckthorn** 998
  - Brake 998
- **Buckwheat** 86
- **Bugle Weed** 998
- **Bulbous Roots, when to gather** .. 982
- **Bunions** 183, 628
- **Burdock** 998
- **Burgundy Pitch** 998
- **Burns and Scalds** 589
  - Ambrine, new remedy for 657
  - What to do in case of 1145
- **Bust, to enlarge** 1166
- **Buttermilk** 1137
- **Butternut** 998

C

- **Cabbage** 87
  - Meadow 1048
- **Calamine Cerate** 1065
  - Prepared 1063
- **Calcined Deers-horn** 999
- **Calculus** 387
  - Fusible 388
  - Mixed 387
  - Oxalate of lime 388
  - Phosphate of lime 388
  - Urate of ammonia 388
  - Uric acid 387
- **Calendar for married ladies** 480
- **Calfsfoot Jelly** 958
- **Calomel** 999
- **Calories in various foods** 98
- **Camphor, medical properties of** .. 1000
  - Liniment 1070
  - Water 1071
- **Camphorated Soap Liniment** 1071
- **Canada Balsam** 1000
  - Fleabane 1000
  - Snakeroot 1060
- **Cancer** 629
  - Black 631
  - Bleeding 631
  - Medullary 631
  - Soft 631
  - Of intestines 350
  - Of womb 449
- **Cancrum Oris** 498
- **Canella** 1000
- **Canker** 498, 539
  - Lettuce 1045
  - Of mouth 498
- **Cantharides, tincture of** 1088
- **Capillaries** 42
- **Capsicum Plaster** 1078
- **Capsules, supra renal, diseases of** 370
- **Caraway** 1000
- **Carbuncle** 588
  - Malignant 589
- **Cardialgia** 341
- **Cardamon** 1000
  - Comp. tincture of 1090
- **Carditis** 315
- **Caries, of the teeth** 625, 662
- **Carminatives** 1104, 1108
- **Carrel System, for Draining of Wounds** 579
- **Carrots** 87
- **Cartilage, 28; Arytenoid** 46
  - Cricoid 46
  - Thyroid 46
- **Cartilaginous Tissue** 19
  - Productions of the hearts ... 313
- **Cascarilla** 1000
- **Casein** 18
- **Cassia Buds** 1003
- **Castor** 1001
  - Oil 1001
- **Catalepsy** 213
- **Cataplasm of Kaolin** 1142
- **Catarrh, nasal** 237
  - Of bladder 369
  - Of stomach 335
- **Catarrhal Ophthalmia** 646
- **Catechu** 1001
  - Confection of 1067
  - Comp. infusion of 1068
  - Comp. powder of 1081
  - Tincture of 1089
  - Comp. tincture of 1090
- **Cathartics** 1101, 1141
- **Catnip** 1001
- **Cayenne Pepper** 1001
  - Tincture of 1089, 1097
- **Celandine** 1002
- **Celery** 1097
- **Cellular Tissues** 18
- **Cerates** 1065
- **Cerebellum** 50
- **Cerebrum** 49
- **Cerebro Spinal Fever** 200
- **Chafing** 655
- **Chalk, prepared** 1002
  - Mixture 1073
  - Comp. powder of 1081
  - " " " with opium 1081
  - Stones 527
- **Chamomile** 829
- **Chancre** 395
- **Changes occurring in life** 550
- **Charcoal** 1003
- **Cherry Cordial, pulmonic** 279
  - Wild 1059
  - Bark syrup 1085
- **Chest, affections of** 949
  - Air in 290
  - Diseases of 259
  - Methods of examining 260
  - Sounds, philosophy of 263
  - Symptoms affecting 128
  - Water in 291
- **Chicken Pox** 162
  - Water 959
- **Chickweed, red** 1044
- **Chilblains** 591

Child-bed fever 474
Child Birth, what to do in absence of physician 466A, 466B
Child's Body, proportion of a healthy 509
Children, care and diseases of 483
  Clothing of 483
  Food of 483
  Nursing sick 492
  Sleep of 490
  Weaning of 489
  Sore mouth of 496
Chills 143
Chloride of Lime 1025
  Of Zinc 1063
  Of Sodium 1050
Chloroform 662
Chlorosis 437, 511
  Diet in 948
Chordee 413
Cholera, Asiatic 362
  Diet in 952
  Symptoms 145
  Infantum 504
  Morbus 361
  Morbus, home remedy for 1134
Chorea 213
  Chronic 215
Chromidrosis 176
Chyle 72
  Destination of 72
Chyme 71
Ciliary processes 55
Cinchona 1036
Cinnamon 1003
  Tincture of 1089
  Comp. tincture of 1090
Cirrhosis of Liver 329
Cirsocele 640
Clap 404
Clavicle, fracture of 606
Cleanliness 110
  In the sickroom 924
Cleavers 1004
Clergyman's sore throat 240
Climate 79, 125
Clothing 106
  As conductors of heat 107
  Catching fire 563
  Color of 109
  Cotton 107
  Hair as 108
  Linen 107
  Objects of 106
  Shoes, thin 109
  Should be porous 109
  Silk 108
  Tight 109
  Woolen 108
Clover, red 1044
Cloves 1004
Clovus 173, 183
Clysters 1069
Coaptation 602
Cocaine 662
Cochineal 1004
Cod Liver Oil 1004, 1138
Coffee 93, 944
  Barley 955
  Crusts 955
  Milk 961
Cohosh, black 995
  Blue 996
  Tincture of 1090
Colchicum, comp. tincture of 1090
Cold, effects of 590
  Water at meals 70
Colds 253
  Lemons for 1095
  Simple home remedy for 1134
Colic 504
  Bilious 354
  Flatulent 353
  Of infants 504
  Painter's 355
  Wind 353
Colica Pictorum 355
Colitis 363
Collar-bone, fracture of 606
  Dislocation of 618
Collodion (New Skin) 1004
Colocynth 1005
Colombo 1005
Colon, the 37
Coltsfoot 1005, 1060
Coma, an alarming symptom 937
Comedones 177
Comfrey 1005
  Comp. wine of 1072
Common Silkweed 1005
Complexion 1153
  Diet in 1155
  Lemons for 1096
Compresses 903
Compression 594
  Of arteries 658
Conception 457
  Prevention of 457
Confections, aromatic 1066
  Of Catechu comp 1067
  Of Senna 1067
Conserves 1066
Constipation 144, 357
  Simple home remedy for 1129, 1134B
Constitution, the 124–126
Consumption 259
  A general disease 271
  Of bowels 346
  Causes of 265, 269
  Can it be cured 270
  Constitutional treatment 275
  Dieting in 282
  Drugs in 284
  Exercise in 282
  Partial sweating in 937
  Stages of 264
  Travelling in 284
  Tubercular 269

  Use of water in 281
Contusions 624
Convulsions 937
  Diet in 947
Cookery for the Sick Room 954
Copper 1006
  Acetate of, poisoning by 565
  Sub-acetate 1006
  Sulphate of 1006
Corn, Indian 86
  Crow 1053
Cornea 54
  Inflammation of 647
Corneitis 647
Corns 173
  Lemons for 1096
Corpulence, Diet in 971
Corrosive Sublimate 1006
  Poisoning by 565
Coryza 156
Costiveness 357
  During pregnancy 462
Cotton 1006
Cough 143, 279
  During pregnancy 464
  Symptoms indicated by 130
  Whooping 502, 936
  Whooping, diet in 951
  Preparations 1107, 1138
  Simple home remedy for 1134
  Lemons for 1095
Counter Extension 601
  Irritation 578
  Irritants 1111
Coup de Soleil 402
Cow-Pox 162
Coxalgia 627
Crabs, crab lice 181
Cramp Bark 1016
Cramps, in different parts of body 215
Cranesbill 1007
Crawley 1007
Cream 941
  Of tartar 1040
Creosote 278
  Ointment 1074
Croton Oil 1008
  Liniment 1070
Croup 500
  Dangerous symptoms in 936
Crow Corn 1053
Crural Phlebitis 473
Crust Coffee 955
Cubeb 1008
Cucumber, wild (Squirting) 1059
Culvers Root 1008
Cyanosis 507
Cystirrhoea 369
Cystitis 368
  Cystogen, for 1138

D

Dancing 100
Dandelion 1009, 1097
Dandruff 183
Deadly Nightshade 1009
  Poisoning by 567
Deafness 653, 936
Death, apparent from various causes 560–563
  Of the bowels 626
  Proofs of 979
Debility, remedy for 1095
Decoctions 1067
Delivery 466
Delirium Tremens 191
Dementia 221
Deposits, Cystine 386
  Hippuric acid 385
  Oxalic 383
  Phosphatic 382
  Urate of ammonia 385
  Urinary 378
Depression 144
Derbyshire Neck 635
Dermoid Tissue 19
Deshlers' Salve 1066
Diabetes 373
  Dieting in 974, 1138
Diaphoretics 1109
Diarrhoea 360
  Chronic 360
  In consumption 280
  Diet in 952
  In infants 503
  When a dangerous symptom 937
  Simple home remedy for 1129, 1134B
Dictionary, pronouncing 1405
  Of drugs and medicines 1124
Diet 97, 119
  A complex subject 76
  For complexion 1155
  In consumption 282
  In convalescence 939
  During confinement 473
  For the aged 551
  For nursing women 484
  In old age 81
  In general diseases 945
Dieting in Regard to Health 970
  In disease 973
Digestion, symptoms relating to 131
Diphtheria 247, 533
Diseases, general 510
  Nervous, effects of 67
Disinfectants 928, 1139
Dislocations 617–624
  What to do in case of 1146C
Diuretics 1109
Dizziness 227
Dogwood 1009
  Poisoning by, remedy for 567
  Swamp 1055
Doses 984
  Frequency of 126
Douche Bath 909
Dovers' Powders 1082
Dragon Root 1018

Dressings, antiseptic....468, 596
Drinks, for the sick....944, 955
  Refreshing in fever.... 955
Dropsy of the Belly.... 389
  Of the brain.... 200
  Of the cells.... 391
  General.... 391
  Diet in.... 948
  Simple home remedy for.... 1131
Drowning.... 560
Drunkenness.... 192
  Cure for.... 197
Dura Mater.... 50
  Inflammation of.... 188
Dysentery.... 363
  Chronic.... 364
  Diet in.... 952
Dysmenorrhea.... 435
Dyspepsia and Complications in . 336
  Causes of.... 337
  Diet in....951, 973
  Lemons, cure for.... 1095
  Simple home remedy for 1129, 1134B
Dyspeptics.... 89
Dystrichiasis.... 644

E

Ear.... 144
  Affections of.... 652
  Bath.... 916
  Drum of.... 56
  External.... 56
  Foreign substances in.... 655
    What to do in case of.... 1146
  Wax in.... 652
Earache.... 652
  Simple home remedy for 1129, 1134B
Eating, rapid.... 69
Eclampsia.... 476
Eclectics.... 9
Ecstasy.... 213
Ecthyma.... 170
Eczema.... 166
  Simple home remedy for.... 1129
Eggs.... 941
Egg-nog.... 962
Elbow, fracture of.... 608
  Joint dislocation of.... 620
Elder.... 1010
  Dwarf.... 1010
Elecampane.... 1010
Electricity.... 554
Electro-Magnetism.... 1010
Electuaries.... 1066
Electuary, lenitive.... 1067
Elixir Solutis.... 1092
  Vitriol.... 1089
Elm, slippery.... 1049
Emetics.... 1100
Emphysema.... 288
Encephalitis.... 189
Endocarditis.... 315
Endosmosis.... 900
Enteritis.... 347
  Diet in.... 951
Enuresis.... 377
Epiglottis.... 46
  Inflammation of.... 227
Epilepsy, fits.... 211
Epistaxis.... 654
Epsom Salts.... 1027
Ergot.... 1052
Eruptions, scaly.... 170
  Tubercular.... 397
  Vesicular.... 397
Erysipelas.... 163
  Diet in.... 947
Erythema.... 165
Erythematic Stomatitis.... 496
Essences.... 1067
Eustachian Tube.... 57
Eucaline.... 1139
Excoriation.... 655
  When a bad symptom.... 937
Exercise, Dumbbell.... 1175
Exerciser-Whitely.... 1207
Exhalants.... 45
Exhaustion, headaches from.... 233
Exosmosis.... 900
Exostosis.... 626
Expectorants.... 1107
Expectoration, symptoms indicated by.... 130
External Parts, itching of.... 453
Extracts.... 1067
  Fluid.... 1068
  Of rhubarb and potassa.... 1073
Eyes.... 54
  Affections of.... 643
  Bath of.... 916
  Coats of.... 54
  Crystalline humor of.... 55
  Care of.... 1162
  Diseases of, headaches from. 229
  Foreign bodies in.... 643
    What to do in case of.... 1146
  Globe of.... 54

  Humors of 55
  Watery 644
Eyebrows 56
Eye-lashes, disorders of 644
Eyelids 56, 144
  Inflammation of 643

F

Face, do not cover while asleep 105
  Symptoms affecting 127
  Lemons for 1096
Face-ache 217
Fainting 226, 464
  An alarming symptom 936
  What to do in case of 1146G
Falling Sickness 210
Fallopian Tubes 419
  Inflammation of 450
False Grape 989
Fat 17
  Anti 1137
  How to grow 970
Favus 179
Felon 628
Female Diseases 415
  Weakness 429
  Complaints, remedy 1139
Fern, male 1027
  Sweet 1050
Ferunculus 533
Fever 144, 145, 516
  And ague 521
  Bilious remittent 520
  Brain 189
  Charts 297
  Child-bed 474
  Cerebro-spinal 200
  Congestive 521
  Diet in 945, 949
  Eruptive 946
  Danger of infection from 508B
  Gastric, of infancy 506
  Intermittent 521
  Lemons for 1095
  Lung 296
  Malarial 521
  Pernicious intermittent 521
  Prevention of typhoid 519
  Prognostics in 935
  Refreshing drinks in 955
  Scarlet 157
  Typhoid 517
  Typhoid, lung 299
  Yellow 541
Feverfew 1010
Fibrin 17
Figwort 1010
Fig Syrup 1137
Fingers, fractures of 609
Fire, clothing catching 563
  In sleeping rooms 104
  What to do in case of 1143
Fish 941
Fistula 581
Fits, epileptic 211
  Cataleptic 233
  Of children 508
  What to do in case of 1146G
Flag-root, sweet 1055
Flat-foot (broken arch) 672
Flatulency 353
Flaxseed 1011
  Lemonade 962
Flesh, to reduce 970
Fletcherism 917
Flies and mosquitoes 569, 570
  Spanish 1051
Flour, boiled 958
  Gluten 1138
  Unbolted wheat 79
Flowers, when to gather 982
Flooding 470, 477
Fluctuation 580
Fluor Albus 429
Follicles 45
Fomentations 1068
Food 73
  Adapted to different periods 81
  Albuminous 74
  Amount of, to be taken 88
  And digestion 69
  Animal and vegetable 75, 89
  Articles of 83
  Azotized and non-azotized 75
  Calories in 98
  Choice 78
  Cost of 82
  Digestibility of 76
  Fatty 83
  In winter 80
  For convalescents 940
  For infants 486, 1139
  Gelatinous 74
  Heat generating 74
  Heat producing 81
  In ill health 78
  In old age 81
  In youth and manhood 81
  Nature and destination of 73
  Nitrogenous 75
  Oleaginous 74
  Organic 74
  Proportion of animal and vegetable 91
  Saccharine 74
  Starch and sugar 83
  Strength and warmth derived from 134
  Table 77, 84, 85
  Value of 75, 85, 97
Foot, fractures of 614
Formaldehyde 1139
Forearm, fractures of 608
Fowler's Solution 1051
Foxglove 1011
Fracture Boxes 603
Fractures 600
  Compound 615

  Of bones of foot 614
  Of bones of leg 613
  Of bones of nose 605
  Of breast-bone 610
  Of collar-bone or clavicle 606
  Of elbow 608
  Of forearm 608
  Of the hand and fingers 609
  Of the haunch-bone (pelvis) 610
  Of the knee-pan 612
  Of the lower jaw 605
  Of the ribs 609
  Of the shoulder-blade 607
  Of the skull 605
  Of the thigh-bone 610
  Of the upper arm bone 607
  Of the wrist 609
  Reduction or setting of 601
  Union of 603
  What to do in Case of 1146B, 1146D
Freckles 175, 182
  Lemons for 1096
Frost Bite 590
Frostweed 1011
Fruits for the Invalid 942
Fumigants 927, 1139
Fumigation of Infected Places 926
Fungus Hematodes 631

G

Galbanum Plaster 1078
Gall Bladder 38
  Stones 332
Galls 1011
  Comp. ointment of 1074
Gamboge 1011
Gangrene 581
Garfield Tea 1137
Garget 1039
Gargles 1113
Garlic 1011
  Syrup of 1083
Gastric Juice 69
Gastritis 334
Gastrodynia 342
Gelatin 17
Gengivitis 497
General Diseases, diet in 945
General System, diseases of 510
Genitals, itching of 464
Gentian 1012
  Comp. infusion of 1068
  Comp. tincture of 1091
Geranium, comp. infusion of 1069
Ginger 1012
  Wild 1060
  Syrup of 1083
Ginseng 1012
Glands 45, 57
  Of larynx, inflammation of 241
  Prostate 406
  Thyroid 304
Glanders 668
Glaubers' Salts 1050
Gleet 406, 408
Glossary 1405
Glottis 47
  Spasms of 501
Glycerine 1012
Goitre 635
  Simple home remedy for 1129
Gold, bi-chloride of 1013
Goldenrod, hard leaf 1015
Goldenseal 1013
  Comp. powder of 1081
  Comp. tincture of 1091
Golden Tincture 1091
Golden Wine 1072
Gonorrhoea 404
Goulards Cerate 1065
Gout 527
  Diet in 948, 974
  Lemons for 1095
Granulation 598
Gravel 378, 1134
  Symptoms of 380
  Uric acid in 380
  Root 1043
  Beet, remedy for 1134
Green Sickness 437
  Diet in 948
Grubs or Worms 176
Gruel 944
  Arrowroot 957
  Flour 962
  Indian meal 961
  Oatmeal 962
  Rice 956
  Sage 957
  Water 956
Guaiac, ammoniated tincture of 1091
Guaicol 278
Guaiacum 1014
Gullet 36
  Foreign bodies in 656
Gum Arabic 1014
  Hemlock 1014
  Sweet 1055
Gums, inflammation of 497
Gymnastics 99, 1169
Gypsy Moth 186

H

Habits 125
Haematocele 636
Haemastasis 1014
Haematuria 374
Haemidrosis 176
Hair, care of 1164
  As clothing 108
  And hair tubes, disorders of 179
  Lemons for falling out of 1096
  Oils and washes 1115
  Superfluous 1164
  Tonic, to bleach or redden 1166
Hair-moss 1014
Half Pack 906
Hamamelis 1060
Hand, dislocation of bones of 620

  - Fractures of 609
- **Hands**, care of 1096, 1158
- **Hardhack** 1015
- **Harelip** 247
- **Haunch-bones**, fractures of 610
- **Hay-asthma-fever** 303
  - Adrenalin chloride for 1136
- **Head**, affections of 949
  - Bones of 22
  - Dizziness of 227
  - Symptoms affecting 127
  - Lice 180
  - Water in 198
- **Headaches** 146, 228–233, 463
  - Causes of 229
  - Bilious 230, 233
  - Brow-ague 231
  - Congestive 232
  - From tea and coffee 229
  - Megrims 231
  - Nervous 231, 233
  - Plethoric 229, 232
  - Remedy for sick headache 1130
  - Rheumatic 232, 233
  - Sick 230, 232
  - Lemons for 1095
- **Heart** 41, 146
  - Diseases 306
  - Altered sounds of 308
  - Aneurismal tumors of 312
  - Bone and cartilage in 313
  - Dilatation of ventricles of 310
  - Displacement of 322
  - Enlargement of ventricles of 308
  - Fatty degeneration of 313
  - Hypertrophy and dilatation 311
  - Impulse of 307
  - In Youth and Old Age 559
  - Induration of 312
  - Inflammation of 314–316
  - Murmurs of 318
  - Neuralgia of 321
  - Palpitation of 320, 463
  - Percussion, sounds of 308
  - Polypus of 322
  - Shrinking or atrophy of 313
  - Softening of 312
  - Sounds 307
  - Valves of 306, 317, 319
  - Disease, relief for 1130, 1136
- **Heartburn** 341
  - Lemons for 1095
  - Remedy for 464
- **Heart-Case**, acute inflammation of 313
  - Chronic inflammation of 314
  - Water in 319
- **Heat**, incompatible with excitement 81
- **Hectic Fever** 577
- **Hellebore, American** 988
  - White 1059
  - Ointment 1076
- **Helonias** 1015
- **Hemicrania** 217
- **Hemiplegia** 206
- **Hemlock, comp. tincture of** 1091
  - Gum 1014
  - Poison 1038
- **Hemorrhage** 477
  - During labor 470
  - Of wounds 593
- **Hemorrhoids** 358, 632
- **Henbane** 1015
- **Hepatitis** 326
- **Herbs, Roots and Plants.** How and when to gather 981–1064
- **Herb Teas** 944
- **Hernia** 638
- **Herpes** 166
- **Hiccough** 226
  - When alarming 936
- **High Cranberry** 1016
  - Comp. tincture of 1091
- **Hip-joint**, diseases of 627
  - Dislocation of 621
- **Hives** (Nettle Rash) 164
  - Simple home remedy for 1131
- **Hoarseness**, unfavorable in Small Pox 935
- **Homeopathy** 8
- **Homeopathic Treatment of Diseases** 681
  - Index for 1437
- **Honey Disease** (Honey scab) 170
- **Hookworm** 546
- **Hops** 1016
- **Hordeolum** 643
- **Horehound** 842
  - Water 1058
- **Horn Pox** 164
- **Horsemint** 1017
- **Horseradish** 1017
- **Hot-drops** 1092
- **Houseleek** 1017
- **How to Keep Well** 14A
- **Hydatids**, uterine 443
- **Hydrangea** 1017, 1098
- **Hydrastin**, comp. tincture of 1081
- **Hydrocele** 635
- **Hydrocephalus**, acute 198
  - Chronic 200
- **Hydropathic Treatment** 894
- **Hydropathy** 8
- **Hydropericardium** 319
- **Hydrophobia** 208
- **Hydrothorax** 291
- **Hygiene** 59
- **Hypochondria** 224
- **Hypochondrium** 325
- **Hypogastrium** 325
- **Hypophosphites**, comp. syrup of 1084
- **Hyssop** 1017
- **Hysteria** 441
  - What to do in case of 1146H

I

- **Ice Plant** 1018

- **Iceland Moss** 1018
- **Iceterus** 331
- **Idiocy** 221
- **Idiosyncrasy** 125
- **Idrosis** 176
- **Ileum** 37
- **Impetigo** 170
- **Impotency** 540, 1140
- **Impregnation** 457
- **Incubus** 227
- **Indian Hemp** 1018
  - White 1055
  - Tincture of 1088
- **Indian Turnip** 1018
- **Indican in Urine** 558
  - Colored chart 372
- **Indigestion** 336
  - Diet in 951
  - Intestinal 360
- **Indigo, wild** 1060
  - Ointment 1076
- **Inebriety** 192
- **Infantile Paralysis** 495
- **Infants, exercise of** 491
  - Gastric fevers of 506
  - Milk for 486, 956
  - Moral treatment of 491
  - Paralysis of 495
  - Rules for feeding 487
  - Summer complaint of 504
  - Walking of 491
  - Weaning of 489
  - While sleeping 490
- **Infection in Eruptive Fevers, danger of** 508B
- **Inflammation** 574
  - Of the arachnoid or pia mater 189
  - Of the bladder 368
  - Of the bowels 347
  - Of the brain 189
  - Of the breast 477
  - Of the cornea 649
  - Of the dura mater 188
  - Of the epiglottis 255
  - Of the eyelids 643
  - Of the Fallopian tubes 450
  - Of the gums 497
  - Of the heart 312, 315
  - Of the heart case 313, 314
  - Of the iris 647
  - Of the kidneys 366, 368
  - Of the lachrymal sac 644
  - Of the larynx 241
  - Of the lining of heart 316
  - Of the liver 326
  - Of the mouth 496
  - Of the mucous membrane 241
  - Of the meatus 651
  - Of the neck of womb 420, 422
  - Of the ovaries 426
  - Of the peritoneum 345
  - Of the pharynx 240
  - Of the skin 156
  - Of the spinal cord 202
  - Of the spleen 330
  - Of the stomach 334, 335
  - Of the tonsils 250
  - Of the tympanum 653
  - Of the vagina 452
  - Of the veins 636
  - Of the wind pipe 242
  - Of the womb 444
- **Inflammatory Blush** 165
- **Influenza** 253
- **Infusions** 986, 1068
- **Ingrowing Toe-nails** 654
- **Inhalants** 273–275
  - Alterative 273
  - Anodyne 275
  - Anti-hemorrhage 274
  - Antiseptic 274
  - Astringent 275
  - Expectorant 273, 275
  - Soothing, febrifuge 274
  - Object of 274
- **Inhalation, atmospheric** 280
- **Inhaling, mode of** 275
  - Powder 1082
- **Injections** 899, 1069, 1115
- **Injured, how to lift** 568, 1146G
- **Injuries, chemical** 589
  - Mechanical 592
  - What to do in case of bodily 1145
- **Insanity** 218
  - Causes of 222
  - Cure of 222
  - On one subject 220
- **Insects, bites and stings of** 599
  - Lemons for 1096
  - Remedy for 599
- **Insensibility** 146
- **Interalgia** 353
- **Inter-marriages, improper** 64
- **Intestinal Obstruction** 351
- **Intestines** 36
  - Cancer of 350
- **Iodia** 1137
- **Iodine** 1018
- **Ipecacuanha** 1019
  - American 989
  - Comp. powder of 1082
  - Syrup of 1084
  - Wine of 1072
- **Iris** 54
  - Inflammation of 647
- **Irish Moss, jelly** 957
- **Iritis** 647
- **Iron** 280, 1019, 1140
  - Ammonia, citrate of 1020
  - Black, oxide of 1020
  - Citrate of 1020
  - Citrate of and quinia 1020
  - Citrate of and strychnia 1020
  - Comp. mixture of 1073
  - Hydrated oxide of 1020
  - Iodide of 1020
  - Lactate of 1020

  Persalt of 1021
  Phosphate of 1021
  Powder of 1021
  Precipitated carbonate of 1021
  Protoxide of 1021
  Protoxide solution of 1021
  Protoxide solution of, with rhubarb and colombo 1021
  Protoxide solution with quinine 1021
  Protoxide solution with iodide of potash 1022
  Sulphate of 1022
  Syrup of iodide of 1022
  Syrup of iodide and manganese 1022
  Tartrate of and potassa 1022
  Tincture of muriate of 1022
  Valerianate of 1022
Irritants, external 280
  Counter 1111
Ischuria Renalis 375
Isinglass 1023
  Jelly 957
Itch 167
  Barber's 178
  Simple home remedy for 1131
Itching 174
  Of external parts 453
  Of genitals 464
Ivy, American 989
  Ground 1013
  Poisoning by 567

J

Jackson's Itch 178
Jalap 1023
  Comp. powder of 1082
Jamestown Weed 1054
Jaundice 331
Jaw, fractures of lower 605
  Dislocation of lower 618
Jejunum 37
Jelly, calf's feet 959
  Irish moss 957
  Isinglass 957
  Tapioca 957
Jerusalem Oak 1061
Jiu Jitsu 1187
Joints 27
  Diseases of 627
  False 605
  Stiff 629
Juniper 1023

K

Kidneys 39
  Acute inflammation of 366
  Chronic inflammation of 368
  Bleeding from 374
  Bright's disease of 371
King's Evil 529
Kino 1023
  Comp. powder of 1082
Knee, fracture of 612
  Joints, dislocation of 623
  Pan, dislocation of 623
Kola Koloid 1140

L

Labor 467
Labyrinth 57
Lachrymal Canals 56
  Glands 56
  Sac, inflammation of 644
Lacteals 37
Lady's Slipper 1023
  Yellow 1062
La grippe 254
  Lemons for 1096
Laryngismus Stridulus 501
Laryngitis 236
  Follicular 241
Larynx 46
  Inflammation of 241
Laudanum 1089
  Poisoning by 567
Laurel, mountain 1030
  Narrow leaf or sheep 1030
Lavender, comp. tincture of 1091
Laws of Life and Health 59
Lead 1024
  Acetate of 1024
  Acetate of, ointment 1074
  Cerate of subacetate of 1065
  Colic 355
  Ointment comp. 1076
  Palsy 208
  Plasters 1079
  Plasters comp. 1078
  Plasters, red oxide of 1079
  Poisoning by action of 566
Leaves, when to gather 982
Leg, fractures of 613
  Milk 473
  Swelling of 464
  Swelling of, sudden disappearance of 938
Lemon 1024
  Syrup of 1084
  Water 955
Lemonade 956
  Flaxseed 962
Lemons, Med. uses of 1094–1096
Leprosy 171
Lepra 171
Lettuce 1024
Leucorrhoea 429
  Simple home remedy for 1132
Leucocytosis 512
Lice 180
Lichen 172
Life, Periods of 131
  The infancy of being 59
  Reproduction of 455
  Sickness during 133
  Stature and length of 135
  Turn of 439

- **Life-root**, 1024
- **Ligaments**, 28
- **Ligature**, 594
- **Lightning, apparent death from**, 563
- **Limbs, symptoms affecting**, 129
- **Lime**, 1025
  - Chloride of, 1025
  - Water, 1025
- **Liniments**, 1070, 1112
- **Liquorice**, 1025
- **Liver**, 38
  - Acute inflammation of, 326
  - Chronic inflammation of, 327
  - Cirrhosis of, 329
  - Congestion of, 328
  - Complaints, diet in, 952
  - Of sulphur, 1042
- **Liverwort**, 1025
- **Lobelia**, 1026
  - Tincture of, 1089
  - Comp. tincture of, 1091
  - And capsicum, comp. tincture of, 1092
  - Vinegar, 1093
- **Local Palsy**, 207
- **Locked Jaw**, 210
- **Locomotor Ataxia**, 234
- **Logwood**, 1026
- **Longevity, human**, 133
- **Lost Parts, reproduction of**, 599
- **Lost Vitality (Impotency)**, 540
  - Prescription for, 1140
- **Lotions**, 1113
- **Lumbago (rheumatism)**, 525
- **Lumbar plexus**, 52
  - Region, 325
- **Lumbricus**, 365
- **Lungs**, 40, 147
  - And heart, 122
  - Swelling or hypertrophy of, 289
- **Lupus**, 172
- **Luxations**, 617
- **Lye, strong, poisoning by**, 566
- **Lymphatics**, 44
- **Lypemania**, 220

M

- **Magnesia**, 1026
  - Carbonate of, 1027
  - Sulphate of, 1027
- **Malaria**, 521
  - Simple home remedy for, 1131
- **Malt, infusion of**, 956
- **Mandrake**, 1027
- **Mania**, 220
  - Mania a Potu, 191
- **Manna**, 1028
- **Marasmus**, 494
- **Marshmallow**, 1028
- **Massage**, 1153–1158
- **Mastic**, 1028
- **Masturbation**, 410
- **Materia Medica**, 982–1064
- **Matico**, 1029
- **Meals, number of**, 944
- **Measles**, 156
  - Diet in, 946
  - False, 165
- **Measures, domestic**, 984
- **Meats**, 85, 90, 91
  - Mode of cooking, 551
- **Meatus Auditorius**, 56
- **Meatus, inflammation of**, 651
- **Mediastinum**, 40
- **Medication and Temperaments**, 129
- **Medicine, progress of**, 10
  - Chest, articles for, 983
- **Medicines and their Preparations**, 982
  - Patent and proprietary, 1135
- **Medulla Oblongata**, 50
- **Megrims**, 231
- **Melancholy**, 220
- **Melanosis**, 631
- **Membrane, synovial**, 28
- **Meningitis**, 200
- **Menorrhagia**, 432
- **Menses, absence of**, 430
  - Absence of, prescription for, 479B
  - Cessation of, 439
  - Establishment of, 416
  - Suppression of, simple home remedy for, 1131
- **Menstruation, disturbance of**, 424
  - First symptoms of, 417
  - Painful, 435
  - Painful, prescription for, 479B
  - Profuse, 432
  - Suppressed, garden beet for, 1134
- **Mercury, bi-chloride of**, 1006
  - Ointment of nitrate of, 1075
  - Ointment of red iodide of, 1075
- **Mesenteric Diseases**, 507
- **Mesentery**, 38
- **Metastasis**, 525
- **Metauer's Aperient**, 1073
- **Metritis**, 444
- **Midwifery**, 460
- **Milk**, 82
  - Coffee, 961
  - For convalescents, 941
  - For infants, 486, 956
  - For old persons, 552
  - Ground rice, 958
  - Leg, 473
  - Mothers', 487
  - Porridge, 958
  - Sickness, 344
  - Sterilization of, 488
  - And soda water, 960
  - Sugar of, 277
  - To check secretion of, 479B
- **Milkweed, swamp**, 1055
- **Mind, derangement of**, 218
  - How it gets knowledge, 60
  - State of, in dieting, 80
- **Mindererus, spirits of**, 990
- **Miscarriage**, 464
- **Mixtures**, 1072

  - Almond 1072
  - Brandy 1073
  - Chalk 1073
  - Comp. of iron 1073
  - Extract of rhubarb and potassa 1073
  - Freezing 929
  - Metauer's aperient 1073
  - Neutral 1041
  - Saline 1074
- Moles 175, 179
- Monkshood 1029
- Monomania 220
- Morphia 1034
- Morphine, poisoning by 567
- Mortality in Cold Weather 553
- Mortification 581
- Mosquitoes 570
  - Bites of 599
  - Lemons for bites of 1096
- Mother's Cordial 1085
  - Marks 174
- Motherwort 1029
- Mouth, care of 1162
  - Follicular inflammation of 497
  - Gangrene of 498
  - Inflammation of 496
- Mucous Membrane, inflammation of 241
  - Tissue 18
- Mucus 17
- Mullein 1030
- Mumps 256
- Murmurs, breathing 263
- Muscae Volitantes 648
- Muscles 29
  - Action of 33
  - And bones 122
  - Number of 33
  - Shape of 30
- Mustard 1030
  - Volatile oil of 1030
- Myopia 649
- Myrrh 1030
  - Comp. tincture of 1092

N

- Naevus 174
- Naphtha 1031
- Naphthalin 1031
- Narcotics 1108
- Nasal Duct 56
- Nausea, during pregnancy 462
- Neck, symptoms affecting 127
- Necrosis 626
- Nephritis 366
- Nerve Root 1062
- Nerve Tonic 1105, 1106
- Nerves, cranial 50
  - Diseases of 188
  - Diseases, tonic for 1132
  - Optic 51, 54
  - Pain of 216
  - Of skin disordered 174
  - Spinal 52
- Nervous System 49, 59
  - System, sympathetic 67. 235A
  - System, symptoms affecting 129
  - Tissue 20
  - Prostration 235
- Nettle Rash 164
- Neuralgia 216
  - Simple home remedy for 1130
- Neurasthenia 235
- Neuritis 235A
- Neutralizing Cordial 1086
  - Extract 1073
  - Powder 1082
- New Jersey Tea 1044
- New Skin (collodion) 1004
- Nightmare 227
- Night-nurse 921
- Night Sweats 280
- Nipples, sore 463, 478
  - Prescription for 479B
- Nitrate of Silver 1031
- Nitre and Sweet Spirits of 1032
- Nitric Ether, spirits of 1052
- Nose 147
  - Bleeding from 654
  - Foreign substances in 655
    - What to do in case of 1146
  - Fractures of 605
  - Red 186
- Noxious Vapors, apparent death from 560
- Nurse, activity of 931
  - Wet 484
- Nursing Bottles 486
  - Sore mouth 477
  - Women 484
- Nutmeg 1032
- Nutrition Table 75
- Nutritive Fluid 961
- Nux Vomica 1032

O

- Oats 85
- Obesity, remedy for 1137
- Occupational Diseases and Charts of 963
- Oesophagus 36
- Oil of Cajuput 1033
- Oil Glands 48
  - Disorders of 176
- Ointments, how to make 1074–1076, 1111, 1112
- Old Age and its Diseases 550
  - Diet in 81
  - Medical treatment of 555
  - Preservation of health in 550
- Olive Oil 1033
- Omentum 38
- Onion 1033
- Ophthalmia, catarrhal 646
  - Of children 646
  - Purulent (Egyptian) 645
  - Scrofulous 646

- Tarsi 643
- **Opium** 1033
  - Camphorated tincture of 1092
  - Liniment 1070
  - Poisoning by 567
  - Tincture of 1089
- **Opodeldoc Liniment** 1071
- **Orange Blossoms** 1142
  - Peel 1034
  - Peel, tincture of 1088
- **Orbits** 56
- **Orchitis** 406
- **Organized Compounds** 17
- **Organs, digestive** 35
  - Of hearing 56
  - Of circulation 41
  - Private, symptoms affecting 129
  - Of secretion 45
  - Of sight 54
  - Respiratory 40
  - Vocal 46
- **Origanum** 1034
- **Osmidrosis** 176
- **Osseous Tissues** 19
- **Osteopathy** 892
- **Otalgia** 652
- **Otitis** 653
- **Otorrhea** 651
- **Ovarian Disease** 938
- **Ovaries** 420
  - Inflammation of 426
  - Prescription for 479B
  - Tumors of 450
- **Ovaritis** 426
- **Ovum** 418
- **Oxalic Acid, poisoning by** 566

P

- **Pack, half** 906
  - Wet sheet 904
- **Pain** 148, 1141
  - Symptoms indicated by 130
  - Sudden disappearance of 936
- **Pallagra** 548
- **Pallidness, when a bad symptom** 936
- **Palpitation, anæmic** 320
  - Of heart 320, 463
  - Nervous 320
- **Palsy** 205
  - Diet in 948
  - Lead 208
  - Local 207
  - Shaking 207
- **Panada** 956
- **Pancreas** 38
- **Papillae** 173
- **Papulous Scall** 170
- **Paralysis** 205
  - Infantile, spinal 495
  - Of one side of body 206
  - Of lower part of body 206
  - Of the aged 557
- **Paraplegia** 206
- **Paregoric Elixir** 1092
- **Paronychia** 628
- **Parotid Gland** 36
- **Parotitis** 228
- **Parsley** 1034
  - Comp., infusion of 1069
- **Parsnips** 87
- **Partridge Berry** 1035
  - Comp., syrup of 1085
- **Patella, dislocation of** 623
  - Fracture of 612
- **Patients, how to examine** 126
  - Position of 936
- **Paxtine** 1142
- **Peach** 1035
- **Pearlash, purified** 1040
- **Peas** 87
- **Pectoriloquy** 272
- **Pelvis, fracture of** 610
- **Pemphigus** 169
- **Pennyroyal** 1035
- **Pepper, red** 1001
  - Water 1058
- **Peppermint** 1035
- **Pepto-Mangan** 280
- **Pericarditis** 313
- **Pericardium** 41
- **Periostitis** 625
- **Peritoneum** 324
  - Acute inflammation of 345
  - Chronic inflammation of 345
- **Peritonitis** 345
- **Persimmon** 1035
- **Perspiration** 111
  - Symptoms indicated by 132
- **Peruvian Bark** 1035
  - Comp., tincture of 1092
- **Pessaries** 447
- **Petroleum** 1037
- **Pharmacy** 1065
- **Pharyngitis** 240
  - Follicular 240
- **Pharynx** 36
  - Inflammation of 240
- **Phenolthalen, cathartic** 1141
- **Phlebitis** 636
  - Chronic 637
- **Phlegmasia Dolens** 473
- **Phosphates, Comp. syrup of** 1085
- **Phosphorus** 276, 1037
- **Phrenitis** 189
- **Phrenology** 1214A
- **Phthisis** 259
- **Physical Culture** 1169–1214
  - And jiu jitsu 1187
- **Physiological Laws** 59
- **Physiologists** 9
- **Phytoline** 1137
- **Pia Mater** 50
  - Inflammation of 189
- **Pigeon Berry** 1039
- **Piles** 358, 632
  - During pregnancy 462
  - Ointment for 1076
  - Simple home remedy for 1132

- Pills 1077
- Pimples, dry 171
  - Mattery 169
  - Watery 165
- Pinworms 365
- Pinkroot 1037
- Pinna 56
- Pipsissewa 1037
- Pityriasis 171
- Placenta Praevia 477
- Plantain 1038
- Plants and Animals, relations of 120
- Plants, Medicinal, when to gather 982
- Plasters 1077–1079, 1141
- Plastic Lymph 577
  - Diet in 950
- Pleurisy 292
  - Diet in 950
  - Root 1038
- Pleuritis 292
- Pneumonia 296
  - Broncho 300
  - Typhoid 299
  - Diet in 949
  - Antiphlogistin for 1136
- Pneumothorax 290
- Podophyllin 1027
- Poison Hemlock 1038
  - Ointment 1075
  - Oak 1039
- Poisoning 149
  - Accidents by 564
  - Antidotes of 1146H, 564
  - Ptomaine 567
  - Ivy or dogwood 1132
- Poisons, mineral 565
  - Vegetable 566
  - Industrial, methods of entry into the system 967
  - Methods of combating 968
- Poke 1039
  - Ointment 1075
- Poliomyelitis 495
- Polypus 632
  - Of the heart 322
  - Of the womb 442
- Pompholix 169
- Pond Lily, white 1059, 1099
- Poplar 1056
- Pores of skin should be kept open 112
- Porridge, milk 958
- Porrigo 179
- Potash, nitrate of, poisoning by 566
- Potassa 1039
  - Acetate of 1040
  - Bicarbonate of 1040
  - Bitartrate of 1040
  - Carbonate of 1040
  - Chlorate of 1040
  - Citrate of 1041
  - Nitrate of 1032
  - Solution of 1041
  - Solution of citrate of 1041
  - Solution of arsenate of 1051
  - And soda, tartrate of 1050
  - Sulphate of 1041
  - Tartrate of 1041
- Potassium 1041
  - Bromide of 1041
  - Iodide of 1019
  - Cyanuret of 1042
  - Sulphuret of 1042
- Potatoes 87
- Poultices, how to make 1079
  - Anodyne 1080
  - Arrowroot 1080
  - Bread and water 1079
  - Carrot 1079
  - Charcoal 1080
  - Flaxseed 1079
  - Indian meal 1080
  - Lobelia 1080
  - Mustard 1080
  - Oatmeal 1079
  - Onion 1080
  - Poke-root 1080
  - Slippery Elm 1080
  - Yeast 1079
- Powders, how to make 1080–1083
- Pox 394
- Pregnancy, prevention of 465
  - Treatment of 461
  - Tubal 454
- Presbyopia 650
- Prescriptions 1100–1123
- Prickly Ash, Elder 1042
- Prince's Pine 1037
- Principles of diet 98
- Probang, now superseded 245
- Prognostics 935
- Prolapsus ani 505
  - Uteri 445
- Pronouncing Dictionary 1405
- Prophylaxis 537
- Propriety of imparting physiological knowledge 456
- Proprietary and Patent Medicines 1141
- Prostate Gland 406
- Proud Flesh 657
- Prurigo 172
  - Of the vulva 453
- Pruritis 174
- Prussic-acid, poisoning by 567
- Psoriasis 171
- Ptosis 644
- Puerile respiration 263
- Puerperal Fever 474
  - Convulsions 476
- Pulmonary Artery 42
  - Consumption 264
- Pulmonic Cherry Cordial 279
- Pulse, symptoms indicated by 131
- Pumpkin 1098
  - Seeds 1043
- Purges 1101
- Purple Disease 532

  - Spots 937
- Purpura Hemorrhagica 532
- Purtusis 462
- Pussy Willow 995
- Pustule, malignant 589
- Pyaemia 582
- Pyrosis 342

Q

- Quassia 1043
- Queen of the Meadow 1043
- Queens Root 1043
- Quick Diagnosis Diagrams 142–147
- Quinacetine 1140
- Quinia, sulphate of 1036
  - Valerianate of 1037
- Quinsy, sore throat 250
  - Simple home remedy for 1130, 1134B

R

- Rabies 208
- Radium 670
- Ramollissement 190
- Rashes on Children 493
- Recipes 1100
- Rectum 37
- Red Osier 1055
  - Root 1044
  - Saunders 1044
- Refrigerants 1109
- Resin Cerate 1066
  - Plaster Comp. 1078
- Respiration, artificial 1146A
- Resolution 577
- Rest and Sleep 103
- Restorative 960
  - Wine bitters 1072
- Retina 55
- Rhatany 1044
- Rheumatism, acute 525
  - Chronic 526
  - Diet in 948, 974
  - Lemons for 1095
  - Muscular 526
  - Remedy for 1134, 1141
- Rhubarb 1045
  - Aromatic syrup of 1084
  - Comp., tincture of 1092
  - Comp., powder of 1082
  - And Potassa, Comp., powder of 1082
  - And Potassa, Comp., syrup of 1086
  - And Potassa, extract of 1073
  - Tincture of 1089
- Ribs, fracture of 609
- Rice 86
  - Milk 958
  - Water 954
- Rickets 507
- Rigors 936
- Riggs' disease 673
- Ringworm of scalp 180, 1130
- Rochelle Salts 1050
- Roentgen Ray 668
- Roots, when to gather 982
- Rosemary 1045
  - Marsh 1028
- Roseola 165
- Rose Rash 165
- Rose, red 1044
- Rose Water Ointment 1075
- Rosin 1044
- Roman Leaved Pyrola 1045
- Rubeola 156
- Rue 1043
- Rupia 169
- Rupture 638
- Ruptures of tendons 625
- Rye 86
  - Spurred 1052

S

- Sacral Plexus 52
- Saffron 1046
  - Meadow 1029
- Sage 1046
  - Tea 955
- Saint Anthony's Fire 163
  - Ignatius' bean 1053
  - Vitus' dance 213
- Sal-ammoniac 990
- Salep, powders, Comp. 956
- Sal Hepatica 1141
- Salpingitis 451
- Salt, common, its uses 1050
  - Epsom 1027
  - Glauber's 1050
  - Tartar of 1040
- Saltness, of the ocean 96
- Saltpetre 1032
  - Poisoning by 566
- Salt Rheum 166
- Salvarsan "606" 404
- Sammetto 1141
- Sanguinarin 995
- Sarsaparilla 1046
  - Comp. syrup of 1086
  - False or wild 1049
- Sassafras 1046
- Savin 1047
  - Cerate 1066
- Scabies 167
- Scalds 589
- Scammony 1047
- Scarification 598
- Scarf-skin 47
- Scarlatina 157
  - Diet in 947
- Scars 598
- Sciatica 218
- Sclerosis 671
- Sclerotic coat of eye 54
- Scoke 1039
- Scorbutus 530
- Scrofula 529, 1137
- Scrotum, blood in 636
  - Water in 635
- Scull Cap 1047, 1099

- **Scurvy** 530
- **Seasickness** 343
  - Lemons for 1096
- **Sedatives** 1109
- **Seidlitz Powders** 1050
- **Self-pollution** 410
- **Semen** 458
- **Seneca** 1074
  - Syrup of 1085
- **Senna** 1048
  - Confection of 1067
  - Comp., infusion of 1069
  - Comp., syrup of 1087
  - And Jalap, tincture of 1092
- **Sensations** 61
  - Kinds of 61
  - Strength of 61
- **Septic and Aseptic** 572
  - Wounds 592
- **Septicaemia** 474
- **Serous Tissue** 18
- **Serums** 573
- **Sex** 125
  - Of, child, to know before birth 479
- **Sexual Diseases** 394
  - Prevention of 409
  - Organs, description of 419
- **Shaking Palsy** 207
- **Shingles** 166
- **Short Sight** 649
- **Shoulder-blade, fracture of** 607
  - Joint, dislocation of 619
- **Shrubby Trefoil** 1048
- **Sick, care of** 62
  - Children, how to nurse 492
  - How to lift them 568
- **Sick-room, choice of** 920
  - Beds and bedding for 922
  - Cleanliness in 924
  - Cookery for 954
  - Darkening of 925
  - Domestic management of 920
  - Fumigation of 926
  - No cooking in 922
  - Prejudices and antipathies in 934
  - Sofa or reclining chair in 921
  - Temperature of 924
  - Unhired attendants in 933
  - Ventilation in 922
- **Sight, long and short** 649
  - Weakness of 648
- **Signs and abbreviations** 894
- **Simple Ointment** 1075
  - Cerate 1066
  - Home remedies 1129–1134B
  - Syrup 1083
- **Singultus** 226
- **Sinus** 581
- **Sippets** 960
- **Skin** 47, 149
  - Care of 1153
  - Care of, of the aged 553
  - Color of disordered 175
  - Congestive inflammation of 156
  - Diseases 155
  - Nerves of, disordered 174
  - Offices of 110
  - Scarf and true 47, 48, 155
- **Skull, fractures of** 605
- **Skunk Cabbage** 1048
- **Sleep** 103, 1161
  - Amount of 106
  - Disturbed 227
  - Natural position for 105
  - Of children 490
  - Preparation for 106
- **Sleeping Apartment** 920
  - In small rooms 118
  - Room 104
  - Room, beds and bedding in 105
  - Room, open fireplace in 104
  - Room, open windows in 104
- **Sleeping Sickness** 524
- **Sleeplessness** 554, 1140
- **Slippery Elm** 1049
  - Poultice 1080
- **Sloughing** 581
- **Small Pox** 160
  - Vaccination 159A, 159B
  - Diet in 947
  - Symptoms in 145
- **Smartweed** 1058
- **Snakeroot** 1047
  - Canada 1060
  - Virginia 1058
  - Comp., tincture of 1093
  - Tincture of 1089
- **Snakes, bites of** 599
- **Soap** 1049
- **Soda, bicarbonate of** 1050
  - Borate of 1050
  - Muriate of 1050
  - Super-carbonate of 1050
  - Sulphate of 1050
  - Sulphite of 1050
  - Tartrate of Potassa and 1050
- **Sodium, chloride of** 1049–1050
- **Solar Plexus** 235A
- **Solomon's Seal** 1051
- **Soluble Tartar** 1041
- **Sore Throat, clergyman's** 240
  - Quinsy 250
  - Simple remedy for 1130, 1134B
- **Sores** 151
  - On babies, remedy for 1131
- **Soup, vegetable** 958
- **Spanish Flies** 1051
  - Cerate 1066
  - Liniment 1070
  - Poisoning by 567
- **Spearmint** 1051
- **Speculum** 421
- **Spermaceti** 1052
  - Ointment 1076

- Spermatozoa 458
- Spiced Plaster 1078
- Spiders, bites of 599
  - Web 1052
- Spikenard, small 1049
- Spinal Cord 47
  - Diseases of 201
  - Inflammation of 202
  - Nerves 52
- Spine, deformities, irritation of 640
- Spleen 38
  - Acute inflammation of 330
  - Chronic inflammation of 330
- Splenitis 330
- Splinters, steel or wood, how to draw out 1131
- Sponge 1052
- Spotted Acne 177
- Sprains 624
  - What to do in case of 1146C
- Squill 1053
  - Syrup 1085
  - Vinegar 1093
- Squinting 650, 936
- Stagger Weed 1057
- Stammering 508A
- Stargrass 1053, 1099
- Sterility 455
  - Causes of 459
- Stethoscopes 261
- Stiff Neck 642
- Stillingia 1043
  - Comp., syrup of 1086
- Stimulants 1109
- Stings 599
- Stomach 36, 151
  - Acute inflammation of 334
  - Affections of 951
  - Bile in 72
  - Chronic inflammation of 335
  - Cramps and spasms in 342, 463
  - Movement of 71
  - Ulcer of 666
- Stomatitis Erythematic 496
- Storax 1053
- Strabismus 650
- Stramonium 1054
  - Ointment 1075
  - Poisoning by 567
- Strangulation (Hanging) 563
- Stricture 406
- Strychnine 1032
  - Poisoning by 567
- Stye 643
- Styptics 594
- Submaxillary Gland 35
- Sudorific, tincture 1093
- Suet Ptisan 959
- Suffocation 560
  - What to do in case of 1146A
- Sugar Foods 83
  - Of lead, poisoning by 566
- Sulphur 1054
  - Ointment, comp 1077
- Sumach 1054
- Summer Complaint of infants 504
- Sunburn 175–182
- Sunflower 1054
- Sunstroke 204
  - What to do in case of 1146G
- Suppers, late 106
- Supra-renal capsules, diseases of 370
- Suppuration 580
- Surgery, natural 585
- Surgical Diseases 571–657
  - Operations, preparation for 574
- Sutures 594
- Swallowing, difficulty of 936
- Swathing 463
- Sweat Glands 49
  - Disorders of 176
- Sweating Process 903
- Sweet Oil 1033
- Swellings 150, 289, 464
- Sycosis 178
- Sympathetic Nerve 52, 235A
- Symptoms of Diseases 126
  - Table explaining 126–132
  - That quickly tell complaint 142
- Syncope 226
- Synovial Degenerations 627
  - Membrane 28
- Syphilis 394
  - Salvarsan "606" for 404
- Syrups 1083

T

- Table, exhibiting difference between small pox, varioloid, scarlet fever and measles 160
  - Of foods 77, 84, 85
- Tag Alder 1055
- Tamarac, comp., tincture of 1092
- Tamarinds and Whey 960
- Tansy 1055
- Tapeworm 365
  - Simple home remedy for 1133
- Tapioca 1056
  - Jelly 957
- Tar 1056
  - Ointment 1076
  - Plaster, comp 1078
- Tartar, soluble 1041
- Tea and Coffee 93
- Teeth 34
  - Care of, 662; Baby's 494A
  - Cleaning of 665
  - Composition of 35
  - Cutting of, difficult 498
  - Diseased 666
  - Filling 664
  - First 665
  - Names and number of 34
  - Origin of 34
  - Riggs' disease of 673
  - Rotting of 662
  - Tartar on 663

- **Temperance** 92
- **Temperaments** 122–124
- **Temperature** 138
  - Symptoms indicated by 132
  - Of body 132
  - Chart of, in fevers, etc., opp. 297
- **Tendons, ruptures of** 625
- **Tetanus** 210
- **Tetter** 166
  - Crusted 170
- **Thigh Bones, fracture of** 610
- **Thimbleweed** 1056
- **Thorn Apple** 1054
- **Thoroughwort (Boneset)** 997
- **Throat** 152
  - Diseases of 236
  - Diseases, curability of 252
  - Diseases worse at night 243
  - Instruments for treating 244–248
  - Symptoms affecting 128
  - Foreign bodies in, what to do 1146
- **Thyroid Tablets** 1142
- **Tic Douloureux** 217
- **Tinctures** 986, 1087
- **Tissues** 18, 19
- **Tobacco** 1056
  - Habit, cure for 1130
- **Toe Nails, ingrowing** 654
- **Toilet Antiseptic** 1142
  - Powder 1140
- **Tolu Syrup** 1085
  - Tincture of 1089
- **Tomato** 1098
- **Tongue, symptoms affecting** 127
- **Tonics** 1104
  - General and nerve 1105
  - And cathartics 1103
- **Tonsilitis** 250
- **Tonsils, inflammation of** 250, 251
  - Enlarged 257
- **Toothache** 664
  - Tree 1042
- **Torticollis** 642
- **Tourniquet** 593
- **Tracheitis** 242
- **Trachoma** 671
- **Trailing Arbutus** 1056
  - Infusion of 1069
- **Trance** 213
- **Trees, cultivation of** 120
- **Trumpet weed** 1043
- **Tuberculosis** 269
- **Tubes, disorders of** 176
  - Perspiratory 111
- **Tulip** 1099
  - Tree 1056
- **Tumors** 629
  - Encysted 177
  - Encephaloid 631
  - Fatty 631
  - Ovarian 450
- **Turkey Corn** 1057
- **Tumeric** 1057
- **Turn of Life** 439
- **Turners Cerate** 1065
- **Turnips** 87
- **Turpentine Liniment** 1071
  - Oil of 1033
- **Tympanitis** 354
- **Tympanum** 57
  - Inflammation of 653
- **Tylosis** 173

U

- **Ulceration** 585
- **Ulcers, indolent** 586
  - Phagedenic 586
  - Simple home remedy for 1132
- **Unconsciousness, what to do in case of** 1146H
- **Unicorn Root** 1053
  - False 1015
- **Upland Cranberry** 992
- **Ureters** 39
- **Urethra** 39
- **Uric Acid** 385, 387
- **Urinary Organs, disease of** 557
  - System 39
- **Urine** 152, 153
  - Characteristics of 379
  - Cystine, deposits in 386
  - Examination of 379
  - Hippuric Acid deposits in 385
  - Inability to hold 377
  - Indican in 558
  - Oxalic deposits in 383
  - Phosphatic deposits in 382
  - Retention of 376, 937
  - Sources of 378
  - Suppression of 375
  - Symptoms indicated by 131
  - Urate of ammonia in 385
- **Urinometer** 379
- **Urticaria** 164
- **Uvula, elongation of** 249

V

- **Vaccina** 162
- **Vaccination, small pox** 159A, B
- **Vaccines** 573
- **Vagina, inflammation of** 452
- **Valerian, American** 1057, 1062
  - Ammoniated, tincture of 1093
- **Valves, mitral, diseases of** 317
  - Semilunar, diseases of 317
  - Mitral and Tricuspid 41, 306
- **Varicella** 162
- **Varicocele** 640
- **Variola** 160
- **Varioloid** 162
- **Varix** 637
- **Vaseline** 1064
- **Vegetable Foods** 75, 89, 942
- **Veins** 43
  - Acute inflammation of 636
  - Varicose or enlarged 637
- **Venereal Diseases** 394

- Ventilation, 65
  - And air, 117
  - In sick room, 119
- Ventricles, 41, 306
  - Dilatation of, 310
  - Enlargement (Hypertrophy) of, 308
- Veratrin, 989
- Verdigris, poisoning by, 565
- Verruca, 173
- Vertigo, 227
- Vervain, 1057
- Vesicles, 40
- Vessels, absorbent, 44
- Vinegar, 1057, 1093
- Vinol, 1138
- Vision, imperfect, 648
- Vitriol, elixir, 1089
  - Poisoning by, 566
- Vocal Cords, 47
- Vomiting, 343

W

- Wahoo, 1058
- Warts and Corns, 173
  - Lemons for, 1096
- Washes, 1113, 1115
- Waterbrash, 342
- Water, 94, 943
  - Chemical nature of, 94
  - Cleansing of, 96
  - Cold at meals, 70
  - Cure, 894
  - Division of, 94
  - External use of, 281
  - Impurities in, 95
  - Internal use of, 903
  - Modus Operandi, 899
  - Of the ocean, 96
  - Pipes, lead, 95
  - Properties of, 95
  - Pure, essential to health, 94
  - Rain, 96
  - Rules for using, 901
  - Salt, 96
  - Supply, 95
  - Quality of, 903
- Waters, medicated, 1071
- Wax, 1059
- Weights and Measures, 984, 985
- Wens, 633
- Wet Dress, 905
  - Nurses, 484
  - Sheet, folded, 906
  - Sheet pack, 904
  - Sheet, rubbing, 907
- Wetting the bed, 377
  - Simple home remedy for, 1131
- Wheat, 85
- Whey, alum, 960
  - Mustard, 959
  - Orange, 960
  - Rennet, 959
  - Sweet, 960
  - Tartar, 959
  - Vinegar, 959
  - With tamarinds, 960
  - Wine, 960
- White Liquid Physic, 1074
  - Oak, 1059
  - Poplar, 1056
  - Swelling, 627
- Whitely Exercisers, 1207
- Whites, 429
- Whitlow, 628
- Wild Snowball, 1044
  - Turkey pea, 1057
  - Woodbine, 989
  - Yam, 1060
- Willow, black, 995
  - Red and Rose, 1055
  - White, 1060
- Windpipe, 40
  - Foreign bodies in, 656
  - Inflammation of, 242
- Wine, for old persons, 552
  - Of American Ash, 1141
  - Of comfrey, comp., 1072
  - Of golden seal, comp., 1072
  - Of ipecacuanha, 1072
- Wines, Medicated, 1072
- Wingseed, 1048
- Wintergreen, 1060
  - Pearl of, 1045
- Witch-hazel, 1060
- Wolfsbane, 1061
- Woman beautiful, 1148
- Womb and appendages, 419
  - Antiflexion and retroflexion, 447
  - Antiversion and retroversion, 446
  - Cancer of, 449
  - Displacement of, 447
  - Enlargement of neck of, 422
  - Falling of, 445
  - Falling over of, 446
  - Inflammation of, 444
  - Inflammation of neck of, 422
  - Polypus of, 442
  - Sinking of, 460
  - Tumors of, 448
  - Ulceration of, 422
- Worm Powder, 1082
- Worms, 153, 176, 365
- Wormseed, 1061
- Wormwood, 1061
- Wounded, first aid to, 1146E
- Wounds of various kinds, 592, 1146E
  - Bleeding from, 656
  - Complicated, 592
  - Contused and lacerated, 598
  - Derangement from, 210
  - Draining of (Carrel System), 579
  - Gunshot, 599
  - How to unite, 597
  - Incised, 593
  - Poisoned, 599, 1146F
  - Punctured, 597

Rules for examining and dressing.............595, 1146F
Septic.................... 592
Shock from, what to do in case of.................1146F
Union by first intention..... 594
Water for................. 594
Wrinkles..................... 1155
Wrist, dislocation of........... 620
Fracture of............... 609
Wry neck..................... 642

X

X-Ray........................ 668
Xanthoxylin.................. 1042

Y

Yarrow...................... 1062
Yeast....................... 1062
Poultice.................. 1079
Yellow Dock................. 1062
Comp., syrup of........... 1087
Jessamine................ 1062
Parilla.................. 1063
Youth, diet in.............. 81

Z

Zinc, acetate of................ 1063
Chloride of............... 1063
Iodide of................ 1063
Oxide of................. 1063
Oxide of ointment.......... 1075
Precipitated carbonate of... 1063
Sulphate of............... 1064
Valerianate of............ 1064

Special Index of Herb, Root and Salt Remedies for Various Diseases.

- **Acidity**
  - Bicarbonate of soda, 1050
  - Lime water, 1025.
- **After pains**
  - Blue cohosh, 996
- **Amaurosis**
  - Phosphorus, 1037.
- **Amenorrhœa**
  - Saffron, 1046
  - Wormwood, 1061.
- **Anæmia**
  - Iron, 1019.
  - Powder of iron, 1021
  - Precipitated carbonate of iron, 1021.
- **Apoplexy**
  - Croton oil, 1008.
- **Asthma**
  - Balsam tolu, 992
  - Black cohosh, 996.
  - Coltsfoot, 1005
  - Ground ivy, 1013.
  - Henbane, 1015.
  - High cranberry, 1016.
  - Horehound, 1016
  - Indian turnip, 1018.
  - Lobelia, 1026
  - Naphthlin, 1031.
  - Poison hemlock, 1038
  - Sulphuret of potassium, 1042.
  - Skunk cabbage, 1048
  - Spider's web, 1052.
  - Sulphur, 1054
  - Swamp milkweed, 1055.

- **Bilious colic**
  - Wild yam, 1060
- **Bladder trouble**
  - Cleavers, 1004.
  - Pipsissewa, 1037
  - Round-leaved pyrola, 1045.
- **Bleeding**
  - Acetate of lead, 1024.
  - Hard-leaf golden-rod, 1015.
  - Matico, 1029.
  - Persalt of iron, 1021.
- **Bleeding from the lungs**
  - Acetate of lead, 1024.
  - Bugleweed, 998.
  - Comfrey, 1005.
  - Common salt, 1050.
  - Creosote, 1007.
  - Liverwort, 1026.
  - Oil of turpentine, 1033
  - Witch hazel, 1060.
  - Yarrow, 1062.
- **Bleeding piles**
  - Galls, 1011.
- **Boils**
  - Onions, 1033.
  - Round-leaved pyrola, 1045.
- **Bright's disease**
  - Thimbleweed, 1056.
- **Bronchitis**
  - Balsam tolu, 992.
  - Benzoin, 993
  - Bloodroot, 995.
  - Creosote, 1007.
  - Flaxseed, 1011.
  - Henbane, 1015.
  - Horehound, 1016.
  - Iceland Moss, 1018.
  - Indian turnip, 1018.
  - Liquorice, 1025.
  - Lobelia, 1026.
  - Mullein, 1030.
  - Myrrh, 1030.
  - Pleurisy root, 1038.
  - Redroot, 1044.
  - Rosin, 1044.
  - Seneka, 1047.
  - Skunk cabbage, 1048.
  - Storax, 1053.
  - Sulphuret of potassium, 1042.
  - Swamp milkweed, 1055.
- **Bruises**
  - Figwort, 1010.
  - Vinegar, 1057.
  - Wormwood, 1061.
- **Burns**
  - Collodion, 1004.
  - Houseleek, 1017.
  - Oil of turpentine, 1033.
- **Cancer**
  - Phosphate of iron, 1021.
  - Red clover, 1044.
- **Canker**
  - Alum, 988.
  - Chlorate of potassa 1040.
- **Carbuncles**
  - Bethroot, 993.
  - Round-leaved pyrola, 1045.
- **Chilblains**
  - Petroleum, 1037.
- **Chlorosis**
  - Cotton, 1006.
  - Iodide of iron, 1020.
  - Iron, 1019.
  - Lactate of iron, 1020.
  - Myrrh, 1030.
  - Precipitated carbonate of iron, 1021.
  - Saffron, 1046.
  - Star grass, 1053.
  - Storax, 1053.
- **Cholera infantum**
  - Blackberry, 994.
  - Hardhack, 1015.
  - Logwood, 1026.
  - Rhubarb, 1045.
  - Sweet-fern, 1055.
  - Tomato, 1098.
- **Chorea**
  - Ice-plant, 1018.
  - Iron, 1019.
  - Precipitated Carbonate of iron, 1021.
  - Skullcap, 1047.
  - Stramonium, 1054
- **Colds**
  - Cayenne pepper, 1002
  - Feverfew, 1010
  - Horehound, 1016.
  - Mullein, 1030.
  - Onion, 1033.
  - Peppermint, 1035.
  - Spermaceti, 1052.
  - Vervian, 1057
  - Water pepper, 1058.
- **Colic**
  - Anise, 990
  - Ginger, 1012.

  Helonias, 1015.
  Indian turnip, 1018.
  Oil of cajuput, 1033.
  Peppermint, 1035.
  Star grass, 1053.
  Wild ginger, 1060.
  Wintergreen, 1060.
Coma
  Croton oil, 1008.
Constipation
  Mustard, 1030.
  Wahoo, 1058.
Consumption
  Bugleweed, 998.
  Cod liver oil, 1004.
  Glycerine, 1012.
  Henbane, 1015.
  Iron, 1019.
  Phosphate of iron, 1021.
  Phosphorus, 1037.
  Wild cherry, 1059.
  Witch hazel, 1060.
Convulsions
  Deadly nightshade, 1009.
  Skullcap, 1047.
Corns
  Acetic acid, 987.
Costiveness
  Soap, 1049.
Coughs
  Coltsfoot, 1005.
  Comfrey, 1005.
  Flaxseed, 1011.
  Garlic, 1012.
  Liquorice, 1025.
  Liverwort, 1026.
  Mullein, 1030.
  Onion, 1033.
  Slippery elm, 1049.
  Spermaceti, 1052.
  Water pepper, 1058.
Cramps
  Crawley, 1007.
  High cranberry, 1016.
  Oil of cajuput, 1033.
  Peppermint, 1035.
Croup
  Lobelia, 1026.
Cuts
  Collodion, 1004.

Diabetes
  Creosote, 1007.
  Kino, 1023.
Diarrhœa
  Barberry, 992.
  Bethroot, 993.
  Bismuth, 994.
  Blackberry, 994.
  Canada fleabane, 1000.
  Cascarilla, 1000.
  Cinnamon, 1003.
  Comfrey, 1005.
  Culver's-root, 1008.
  Hardhack, 1015.
  Iceland moss, 1018.
  Kino, 1023.
  Lime water, 1025.
  Logwood, 1026.
  Mandrake, 1027.
  Marsh-rosemary, 1028.
  Partridge berry, 1035.
  Persimmon, 1035.
  Prickly ash berries, 1042.
  Red root, 1044.
  Rhatany, 1044.
  Rhubarb, 1045.
  Sumach, 1054.
  Swamp dogwood, 1055.
  Sweet-fern, 1055.
  White oak, 1059.
  White pond-lily, 1059.
  Willow, 1060.
  Wintergreen, 1060.
  Witch hazel, 1060.
Delirium
  Red chickweed, 1044.
Delirium tremens
  Black cohosh, 995.
Dropsy
  Colocynth, 1005.
  Common silkweed, 1006.
  Croton oil, 1008.
  Dwarf elder, 1010.
  Figwort, 1010.
  Gamboge, 1011.
  Gold, 1013.
  Horseradish, 1017.
  Indian hemp, 1018.
  Jalap, 1023.
  Juniper, 1023.
  Parsley, 1034.
  Partridge berry, 1035.
  Peruvian bark, 1036.
  Pipsissewa, 1037.
  Wahoo, 1058.
  Wild cucumber, 1059.
Dysmenorrhœa
  Saffron, 1046.
Dyspepsia
  Bloodroot, 995.
  Cascarilla, 1000.
  Chamomile, 1003.
  Charcoal, 1003.
  Colombo, 1005.
  Culver's-root, 1008.
  Gentian, 1012.
  Ginger, 1012.
  Golden seal, 1013.
  Helonias, 1015.
  Iceland moss, 1018.
  Iron, 1019.
  Citrate of iron and strychnia, 1020.
  Sulphate of iron, 1022.
  Magnesia, 1026.
  Quassia, 1043.
  Swamp dogwood, 1055.
  Sweet-flag, 1055.
  Tansy, 1055.
  Virginia snakeroot, 1058.
  Wahoo, 1058.
  Wild cherry, 1059.
  Yellow parilla, 1063.
Dysentery
  Blackberry, 994.
  Buckhorn brake, 998.
  Cascarilla, 1000.
  Comfrey, 1005.
  Culver's-root, 1008.
  Flaxseed, 1011.
  Iceland moss, 1018.
  Kino, 1023.
  Logwood, 1026.
  Mandrake, 1027.
  Marsh-rosemary, 1028.
  Peach, 1035.
  Persimmon, 1035.
  Pleurisy root, 1038.
  Red root, 1044.
  Slippery elm, 1049.
  Solomon seal, 1051.
  Sumach, 1054.
  Sweet-fern, 1055.
  Vinegar, 1057.
  White pond-lily, 1059.
  Willow, 1060.
  Witch hazel, 1060.
  Yarrow, 1062.

Eczema
  Acetate of potassa, 1040.
Epilepsy
  Creosote, 1007.
  Ice-plant, 1018.
  Precipitated carbonate of iron, 1021.
  Monk's-hood, 1029.
  Nitrate of silver, 1031.
  Red chickweed, 1044.
  Round-leaved pyrola, 1045.
  Rue, 1046.
  Skunk cabbage, 1048.
  Stramonium, 1054.
  Sulphate of copper, 1006.
  Valerian, 1057.
  Wintergreen, 1045.

Erysipelas
  Elder, 1010.
  Golden seal, 1013.
  Houseleek, 1017.

Falling of the womb
  Marsh-rosemary, 1028.
  Star grass, 1053.
Felons
  Poke, 1039.
Fever and ague
  Persimmon, 1035.
  Peruvian bark, 1036
  Spider's web, 1052.
  Tulip tree, 1056.
Fevers
  Hair-cap moss, 1014.
  Liverwort, 1026.
  Mandrake, 1027
  Monk's-hood, 1029
  Solution of citrate of potassa, 1041
  Tartaric acid, 988.
Fever sores
  Sweet gum, 1055.
Flatulency
  Crawley, 1007.
  Feverfew, 1010
  Horsemint, 1017
  Oil of cajuput, 1033.
  Prickly ash berries, 1042.

Gall and bladder stones
  Hydrangea, 1017
Gleet
  Bethroot, 993.
  Cubebs, 1008.
  Chlorate of potassa, 1040.
  Marsh-rosemay, 1028
  Redroot, 1044.
  Storax, 1053.
  Sulphate of copper, 1006.
Goitre
  Gold, 1013.
  Iodine, 1018
  Sponge, 1052.
Gonorrhœa
  Balsam copaiba, 991
  Cubebs, 1008
  Nitrate of silver, 1031.
  Opium, 1033.
  Parsley, 1034
  Solution of potassa, 1041.
  Spanish flies, 1051.
  Storax, 1053.
  Sumach, 1054
  White pond-lily, 1059.
Gout
  Burdock, 998.
  Deadly nightshade, 1009
  Ginger, 1012.
  Magnesia, 1026.
  Monk's-hood, 1029.
  Queen of the meadow, 1043
  Sulphur, 1054.
  Yellow parilla, 1063.
Gravel
  Dwarf elder, 1010.
  Gravel root, 1043
  Hair-cap moss, 1014.
  Queen of the meadow, 1043.
  Trailing arbutus, 1056.
  Water pepper, 1058.
Green sickness
  Citrate of iron and strychnia, 1020.

Headache
  Spider's web, 1052.
  Valerianate of quinia, 1037.
  Valerian, 1057.
  Vinegar, 1057.
  Yellow lady's-slipper, 1062.
Heartburn
  Bismuth, 994.
Hectic fever
  Sumach, 1054.
Hematuria
  Queen of the meadow, 1043.
Hemorrhages
  Mountain laurel, 1030.
  Oil of turpentine, 1033.
  Persimmon, 1035.
  Tincture of muriate of iron, 1022.
  White oak, 1059.
Herpes
  Tag alder, 1055.
Hydrophobia
  Red chickweed, 1044.
Hypertrophy of the heart
  Mountain laurel, 1030.
Hypochondria
  Valerian, 1057.
Hysteria
  Saffron, 1046.
Hysterics
  Catnip, 1001,
  Creosote, 1007
  Citrate of iron and strychnia, 1020.
  Feverfew, 1010.
  Henbane, 1015.
  High cranberry, 1016.
  Iron, 1019.
  Lady's-slipper, 1023.
  Oil of cajuput, 1033.
  Peppermint, 1035.
  Rue, 1046.
  Skunk cabbage, 1048.
  Star grass, 1053.
  Sulphate of copper, 1006.
  Yellow lady's-slipper, 1062.

Impetigo
  Tag alder, 1055.
Inflammation of the bladder
  Buchu, 997.
  Croton oil, 1008.
  Marshmallow, 1028.
  Slippery elm, 1049.
Inflammation of the bowels
  Flaxseed, 1011.
  Marshmallow, 1028.
  Peach, 1035.
  Slippery elm, 1049.
  Solomon seal, 1051.
  Yellow parilla, 1063
Inflammation of the breasts
  Figwort, 1010.
Inflammation of the eyes
  Red rose, 1044.
Inflammation of the kidneys
  Bearberry, 992.
  Slippery elm, 1049.
Inflammation of the lungs
  Flaxseed, 1011.
  Marshmallow, 1028.
  Pleurisy root, 1038.
  Slippery elm, 1049.
Inflammation of the stomach
  Marshmallow, 1028.
  Peach, 1035.
  Slippery elm, 1049.
  Solomon seal, 1051.
  Yellow parilla, 1063.
Inflammation of the throat
  Sage, 1046.
Inflammation of the urinary organs
  Flaxseed, 1011.
Intermittent fever
  Golden seal, 1013.
  Sulphate of copper, 1006.
  Sulphate of quinia, 1036.

Shrubby trefoil, 1048.
Vervian, 1057.
Virginia snakeroot, 1058
Wahoo, 1058.
White oak, 1059.
Willow, 1060.
Wormwood, 1061.
Yarrow, 1062.

Itch
Elecampane, 1010.
Sulphuret of potassium, 1042.
Sulphur, 1054.
White hellebore, 1059.

Jaundice
Ground ivy, 1013.
Mandrake, 1027
Mountain laurel, 1030.
Tansy, 1055.
Wormwood, 1061.

Kidney complaint
Boneset, 997.
Burdock, 998.
Ground ivy, 1013.
Parsley, 1034.
Pipsissewa, 1037.
Round-leaved pyrola, 1045.

Laryngitis
Benzoin, 993.
Nitrate of silver, 1031.
Storax, 1053.

Leprosy
Acetate of potassa, 1040.
Burdock, 998.
Corrosive sublimate, 1006.
Iodide of potassium, 1019.
Yellow dock, 1026.

Leech bites
Collodion, 1004.

Leucorrhœa
Bethroot, 993.
Blue cohosh, 996.
Chlorate of potassa, 1040.
Iodide of iron, 1020.
Kino, 1023.
Red root, 1044.
Rhatany, 1044.
Spanish flies, 1051.
Tincture of muriate of iron, 1022.
White oak, 1059
White pond-lily, 1059

Liver complaint
Bitter root, 993.
Boneset, 997.
Dandelion, 1009.
Culver's-root, 1008.
Elder, 1010.
Figwort, 1010.
Mandrake, 1027.
Motherwort, 1029.
Prickly ash, 1042.

Lockjaw
Skullcap, 1047.

Lung disease
Ground ivy, 1013.

Mania
Croton oil, 1008.
Red chickweed, 1044.
Stramonium, 1054.

Menses (absence of)
Citrate of iron and strychnia, 1020.
Iodide of iron, 1020.
Myrrh, 1030.

Menstruation (excessive)
Calcined deer's horn, 999.
Rhatany, 1044.
Yarrow, 1062.

Menstruation (irregular)
Feverfew, 1010.

Menstruation (painful)
Star grass, 1053.

Menstruation (suppression of)
Common silkweed, 1006.
Pennyroyal, 1035.
Star grass, 1053.

Nausea
Creosote, 1007.
Horsemint, 1017.
Saffron, 1046.

Nervous debility
Ginseng, 1012.

Nervous headache
Catnip, 1001.

Nervous trouble
Hops, 1016.
Phosphate of iron, 1021.
Prickly ash berries, 1042.
Red chickweed, 1044
St Ignatius's bean, 1053.

Neuralgia
Cochineal, 1004.
Creosote, 1007.
Deadly nightshade, 1009.
Iron, 1019.
Lady's-slipper, 1023.
Monk's-hood, 1029.
Peruvian bark, 1036.
Poison hemlock, 1038.
Precipitated carbonate of iron, 1021.
Skullcap, 1047.
Yellow lady's-slipper, 1062.

Neuralgia of the heart
Nitrate of silver, 1031.

Night sweats
Crawley, 1007.
Sage, 1046.

Nosebleed
Rhatany, 1044.

Ophthalmia
Gold, 1013.
Round-leaved pyrola, 1045.

Painter's colic
Alum, 988.

Palpitation of the heart
Foxglove, 1011.

Palsy
Stramonium, 1054.

Paralysis
Deadly nightshade, 1009.
Monk's-hood, 1029.
Nux vomica, 1032.
Phosphorus, 1037

Paralysis of the bladder
Spanish flies, 1051.

Pharyngitis
Nitrate of silver, 1031.

Piles
Celandine, 1002.
Figwort, 1010.
Flaxseed, 1011.
Solomon seal, 1051.
Sulphur, 1054
Sweet gum, 1055.

Pleurisy
Pleurisy root, 1038

Poisons (to eject from stomach)
Sulphate of copper, 1006.
Mustard, 1030.

Poison by ivy
Solomon seal, 1051

Pneumonia
Bugleweed, 998.

Psoriasis
Acetate of potassa, 1040.

Quinsy
Sumach, 1054.

Remittent fever
Golden seal, 1013
Peruvian bark, 1036.
Shrubby trefoil, 1048.

Retention of urine
  Common silkweed, 1006.
  Parsley, 1034.
Rickets
  Iron, 1019.
Ring worm
  Figwort, 1010.
  Houseleek, 1017.
  Sumach, 1054.
  Subacetate of copper, 1006.
  Sweet gum, 1055.
Rheumatism
  Balm of gilead, 991.
  Bloodroot, 995.
  Celery, 1097.
  Common silkweed, 1006.
  Deadly nightshade, 1009.
  Elder, 1010.
  Guaiacum, 1014.
  Henbane, 1015.
  Indian turnip, 1018.
  Oil of cajaput, 1033.
  Petroleum, 1037.
  Pipsissewa, 1037.
  Pleurisy root, 1038.
  Poison hemlock, 1038.
  Poison oak, 1039.
  Poke, 1039.
  Poplar tree, 1056.
  Prickly ash, 1042.
  Prickly elder, 1043.
  Queen of the meadow, 1043.
  Queen's-root, 1043.
  Sassafras, 1046.
  Small spikenard, 1049.
  Sulphite of soda, 1050.
  Sulphur, 1054.
  Sulphuret of potassium, 1042.
  Swamp milkweed, 1055.
  Sweet-fern, 1055.
  Tulip tree, 1056.
  Yellow parilla, 1063.

Saint Vitus's dance
  Citrate of iron and strychnia, 1020.
  Nitrate of silver, 1031.
  Spider's web, 1052.
  Yellow lady's-slipper, 1062.
Scalds
  Oil of turpentine, 1033.
Scarlet fever
  Cayenne pepper, 1001.
  Chlorate of potassa, 1040.
  Parsley, 1034.
  Vinegar, 1057.
  Yeast, 1062.
Sciatica
  Skullcap, 1099.
Scrofula
  Bitter-root, 993.
  Bromide of potassium, 1041.
  Burdock, 998
  Celandine, 1002.
  Cod liver oil, 1004.
  Common silkweed, 1006.
  Elder, 1010.
  Figwort, 1010.
  Frostweed, 1011.
  Gold, 1013.
  Guaiacum, 1014.
  Iodine, 1018.
  Iodide of iron, 1020.
  Precipitated carbonate of iron, 1021
  Peruvian bark, 1036.
  Plantain, 1038.
  Poke, 1039.
  Queen's-root, 1043.
  Sponge, 1052.
  Sulphate of iron, 1022.
  Sumach, 1054.
  Syrup of iodide of iron, 1022.
  Tag alder, 1055.
  Turkey corn, 1057.
  White pond-lily, 1059.
  Wild cherry, 1059.
  Yellow dock, 1062.
  Yellow parilla, 1063.
Scrofulous inflammation of the eye
  Frostweed, 1011.
Scrofulous tumors
  Coltsfoot, 1005.
  Sponge, 1052.
Scurvy
  Burdock, 998.
  Chlorate of potassa, 1040.
  Sassafras, 1046
  Tartaric acid, 988.
  Yellow dock, 1062.
Shingles
  Houseleek, 1017.
Sick headache
  Aromatic spirits of ammonia, 990.
  Magnesia, 1026.
Skin diseases
  Guaiacum, 1014.
  Sulphur, 1054.
Sore nipples
  Catechu, 1001.
Sore throat
  Cranesbill, 1007
  Persimmon, 1035.
  Vinegar, 1057.
  Virginia snakeroot, 1058.
Spasms
  High cranberry, 1016.
  Peppermint, 1035.
Sprains
  Vinegar, 1057.
  Wormwood, 1061.
Stings
  Houseleek, 1017.
Strangury
  Life-root, 1024.
  Queen of the meadow, 1043.
  Slippery elm, 1049.
  Thimbleweed, 1056.
Stricture,
  Opium, 1033.
Swellings
  Vinegar, 1057.
Syphilis
  Bromide of potassium, 1041.
  Burdock, 998.
  Corrosive sublimate, 1006
  Gold, 1013.
  Iodide of iron, 1020
  Iodide of potassium, 1019.
  Mountain laurel, 1030.
  Plantain, 1038.
  Poison hemlock, 1035.
  Poke, 1039.
  Prickly ash, 1042.
  Prickly elder, 1043.
  Queen's-root, 1043.
  Sarsaparilla, 1046.
  Small spikenard, 1049.
  Swamp milkweed, 1055.
  Tag alder, 1055.
  Turkey corn, 1057.
  Yellow dock, 1062.
  Yellow parilla, 1063.

Tape worm
  Pumpkin seed, 1043.
  Male fern, 1027.
Tetanus
  Stramonium, 1054.
Tetter
  Sumach, 1054.
  Tar, 1056.
Tracheitis
  Nitrate of silver, 1031.
Tumors
  Figwort, 1010.
  Gold, 1013.

Onions, 1033.
Poke, 1039.
Typhoid fever
Crawley, 1007.
Culver's-root, 1008.
Golden seal, 1013.
Prickly ash, 1042.
Yeast, 1062.
Typhoid pneumonia
Bloodroot, 995.
Typhus fever
Phosphorus, 1037

Ulcers
Bayberry, 992.
Bethroot, 993.
Celandine, 1002.
Chlorate of potassa, 1040
Poison hemlock, 1038.
Prickly ash, 1042.
Red clover, 1044.
Sumach, 1054.
Ulcers (foul)
Subacetate of copper, 1006
Ulcers of the mouth
Myrrh, 1030
Ulceration of the bladder
Bearberry, 992
Ulceration of the mouth
Cranesbill, 1007
Frostweed, 1011.
Round-leaved pyrola, 1045.
Sumach, 1054.
Urine (suppression of)
Cleavers, 1004
Dwarf elder, 1010
Partridge berry, 1034.

Vomiting
Creosote, 1007.
Horsemint, 1017.
Ipecacuanha, 1019.

Warts
Acetic acid, 987
Subacetate of copper, 1006.
Weak stomach
Ginseng, 1012.
Whites
Comfrey, 1005.
Iron, 1019.
Marsh-rosemary, 1028.
Persimmon, 1035.
Sumach, 1054.
White pond-lily, 1059
Whooping-cough
Cochineal, 1004
Deadly nightshade, 1009.
Garlic, 1012.
Henbane, 1015.
Indian turnip, 1018.
Lobelia, 1026
Peach, 1035.
Redroot, 1044
Skunk cabbage, 1048.
Sulphuret of potassium, 1042.
Wind colic
Cascarilla, 1000
Catnip, 1001.
Pennyroyal, 1035.
Rue, 1046.
Sweet-flag, 1055.
Yarrow, 1062.
Wind in stomach
Ginger, 1012.
Tansy, 1055.
Womb complaint
Star grass, 1099.
Water pepper, 1058.
Worms
Feverfew, 1010.
Helonias, 1015.
Pinkroot, 1037.
Rue, 1046.
Savin, 1047.
Swamp milkweed, 1055.
Tansy, 1055.
Wormseed, 1061.
Wormwood, 1061.
Wounds
Collodion, 1004.

INDEX

TO

HOMEOPATHIC DEPARTMENT.

A

- **Abdomen,** dropsy of 851
- **Abscess** 743
- **Acne** 731
- **After-pains,** 818
- **Alopecia** 729
- **Amenorrhea** 812
- **Amblyopia** 700
- **Anæmia** 773
- **Angina Pectoris** 773
- **Anthrax** 734, 742
- **Apoplexia** 865
- **Apoplexy** 865
- **Armpits,** inflammation of glands 739
- **Arthritis** 833
  - Tubercular 834
- **Ascites** 851
- **Asiatic cholera** 838
- **Asthma** 721
  - Bronchial 721
  - Hay 708

B

- **Baldness** 729
- **Barber's itch** 730
- **Beard,** ringworm of 730
- **Bedsores** 836
- **Bilious remittent fever** 848
- **Blackheads** 731
- **Bladder,** inflammation of 774
  - Stone or gravel in 778
- **Blepharospasm** 691
- **Boils** 741
- **Bone,** death of 835
- **Bowels,** inflammation of 846
  - Looseness of 758
- **Brain,** concussion of 826
  - Fever 865
  - Hyperemia of 862
  - Inflammation of 865
- **Breast,** broken 820
  - Inflammation of 820
- **Bright's disease,** acute 781
  - Chronic 782
- **Bronchitis,** acute 719
  - Chronic 721
- **Bronchocele** 832
- **Bruises** 830
- **Bunions** 837
- **Burns** and scalds 835

C

- **Cancer of the intestines** 764
  - Of the liver 764
  - Of the skin 736
  - Of the stomach 763
- **Canker and thrush** 754
- **Carbuncle** 742
- **Caries** 835
- **Cataract** 694
- **Catarrh,** chronic nasal 706
- **Catarrhal conjunctivitis** 695
- **Cephalalgia** 858
- **Cerebro-spinal meningitis** 867
- **Chafing in infants** 787
- **Chicken pox** 795
- **Chilblains** 745
- **Children,** diseases of 786
  - Jaundice in 800
- **Cholera,** Asiatic 838
  - Epidemic 838
  - Infantum 799
  - Morbus 761
- **Chlorosis** 805
- **Chorea** 880
- **Climacteric** 814
- **Colic** 798
  - Painters' 846
- **Conjunctivitis** 695
  - Catarrhal 695
  - Croupous 696
  - Diphtheritic 696
  - Gonorrheal 695
  - Granular 696
  - Purulent 695
  - Scrofulous 696
- **Consumption of the lungs** 725
- **Constipation** 768
- **Contusions** 830
- **Convulsions** 789
- **Cornea,** specks on 700
  - Ulcers of 698
- **Coryza** 790
- **Cough,** whooping 718
- **Croup** 792
  - False 793
  - Membranous 792
  - Spasmodic 793
- **Crying** 787
- **Cystitis** 774

D

Dance, St. Vitus' 880
Deafness 689
Deep Breathing 117
Delirium, drunkard's 863
  Tremens 863
Dementia 887
Dentition, disturbances of 788
Diabetes mellitus 780
Diarrhoea 758
  Chronic 759
Digestive organs, diseases of 753
Diphtheria 714
Diseases of the general system 838
Dislocations 828
Dropsy 850
  Of the abdomen 851
Drunkard's Delirium 863
Dysentery 760
Dysmenorrhea 811
Dyspepsia 755

E

Ear, diseases of 686
  Eczema of the external 687
  Inflammation of the external 686
Earache 688
Ears, running of 689
Eczema 750, 787
Emaciation, extreme 804
Enuresis 777
Epilepsy 874
Epistaxis 703
Epithelioma 736
Erysipelas 732
Eye and lids, diseases of 690
Eyelids, inflammation of the lining membrane 695
  Inflammation of 690
  Twitching of 691
Eyes, rheumatic pains of 699
  Watery 700

F

Felon 737
Fever and ague 847
  Bilious remittent 848
  Brain 865
  Childbed 823
  Hay 708
  Indications for remedies in 853
  Intermittent 847
  Lung 723
  Puerperal 823
  Putrid 841
  Rheumatic 848
  Scarlet 795
  Ship 841
  Simple 794
  Spotted 867
  Typhoid 839
  Typhus 841
  Yellow 842
Fevers, specific indications for remedies 853
Fits 789
  Epileptic 874
Fractures 828
Furunculus 741

G

Gall-stones 766
Gangrene 836
General conditions 686
Goitre 832
Gonorrheal conjunctivitis 695
Gravel in kidneys or bladder 778
Green sickness 805
Grip 709
Groin, inflammation of glands of 739

H

Hay, asthma 708
  Fever 708
Headache 858
Head, cold in 705
  Rush of blood to 862
  Swimming of 861
Hearing, hardness of 689
Heart, dilatation of 772
  Hypertrophy of 772
  Inflammation of the membranes of 770
  Neuralgia of 773
  Palpitation of 773
  Weak 773
Hematuria 778
Hemorrhage 829
  Post-partum 822
Hemorrhoids 769
Hernia 833
Herpes zoster 749
Hiccough 755
Hives 748
Hydrophobia 872
Hypochondria 887
Hysteria 875

I

Imbecility 888
Indications for remedies in fevers, specific 853
Indigestion 755
Infants, diseases of 786
Inflammation of the bladder 774
  Of the bowels 846
  Of the brain 865
  Of the breast 820
  Of the external ear 686
  Of the eyelids 690
  Of the glands of the groin or armpits 739
  Of the iris 692
  Of the joints 833
  Of the lining membrane of the eyelids 695

Of membrane of heart 770
Of the ovaries 810
Of the peritoneum, acute 843
Of the spinal cord 869
Of the spleen 765
Of the testicles 784
Of the tongue 753
Of the uterus 809
Of the urethra 783
Of the vagina 806
Of the vulva 806
Influenza, epidemic 709
Insects, bites and stings of 831
Insomnia 861
Intestines, cancer of 764
Iris, inflammation of 692
Iritis 692
Itch 747
Barber's 730
Itching of the skin 736

J

Jaundice 766
In children 800
Joints, inflammation of 833

K

Kidneys, gravel or stone in 777

L

Labor 816
Bleeding after 822
La grippe 709
Laryngitis, acute 711
Chronic 712
Membranous 792
Laryngismus stridulus 793
Legs, cramps in 882
Leucorrhea 807
Liver, cancer of 764
Liver-spots 746
Lochia, suppression of 824
Lock-jaw 872
Lungs, bleeding from 728
Consumption of 725

M

Maculoe 746
Mania 885
Marasmus 804
Mastitis 820
Measles 797
Medicines, care of 684
Forms of 684
Selecting and using 684
Melancholia 884
Menorrhagia 813
Menses, absence of 812
Suppression of 812
Menstruation, cessation of 814
Painful 811
Mental derangement 882
Metrorrhagia 813
Milk crust 787
Excessive secretion of 821
Fever 821
Leg 825
Scanty secretion of 821
Morning sickness 816
Mortification 836
Mumps 791
Myelitis 869

N

Nausea and vomiting 757
Necrosis 835
Nephritis, acute 781
Chronic 782
Nerve, injury to 830
Nervous system, diseases of 858
Prostration 878
Nettle rash 748
Neuralgia 876
Of the heart 773
Of the stomach 762
Neurasthenia 878
Nipples, sore 819
Night sweats 852
Terrors and sleeplessness 801
Nocturnal enuresis 801
Nose, bleeding from 703
Polypus in 704

O

Ophthalmia 696
Neonatorum 695
Orchitis 784
Organs of circulation, diseases of 770
Otorrhœa 689
Ovaries, inflammation of 810

P

Pains, after 818
False 817
Palsy 870
Scrivener's 881
Paralysis 870
Paronychia 737
Parotiditis 791
Parturition 816
Peritoneum, acute inflammation of 843
Peritonitis, acute 843
Chronic 845
Pertussis 718
Pharyngitis 755
Phlegmasia alba dolens 825
Piles 769
Pleurisy 724
Pneumonia 723
Prickly heat 734
Prostration, nervous 878
Pruritis 736
Pustule, malignant 734

Q

Quinsy 713

R

- **Red gum** 786
- **Remedies in fevers,** specific indications for 853
  - List of 890
- **Respiratory organs,** diseases of 703
- **Rheumatism,** inflammatory 848
  - Inflammatory, chronic 849
- **Rhinitis,** acute 705
  - Chronic 706
- **Richitis** 803
- **Rickets** 803
- **Ringworm on the beard** 730
  - On the body 731
  - On the scalp 730
- **Rose cold** 708
- **Rupture** 833
- **Rush of blood to the head** 862

S

- **Salt Rheum** 750
- **Scabies** 747
- **Scalds** 835
- **Scarlatina** 795
- **Scarlet fever** 794
- **Sciatica** 877
- **Scorbutus** 746
- **Scrofula** 740
- **Scurvy** 746
- **Sea-sickness** 757
- **Shingles** 749
- **Shock** 831
- **Sight,** weakness of 700
- **Singultus** 755
- **Skin,** cancer of 736
  - Itching of 736
- **Sleeplessness** 801
- **Smallpox** 752
- **Snuffles** 790
- **Sores,** bed 836
- **Spinal cord,** inflammation of 869
- **Spleen,** inflammation of 765
- **Spotted fever** 867
- **Sprains** 827
- **Squinting** 694
- **Stammering** 881
- **St. Anthony's fire** 732
- **St. Vitus' dance** 880
- **Stomach,** bleeding from 757
  - Neuralgia of 762
  - Cancer of 763
  - Cramps in 762
- **Stomatitis** 754
- **Strabismus** 694
- **Strains** 827
- **Strangury** 776
- **Stye** 692
- **Sunstroke** 866
- **Surgical diseases** 826
- **Synovitis** 833
- **Syphilis** 774, 785

T

- **Teething in infants** 788
- **Testicles,** inflammation of 784
- **Tetanus** 872
- **Tetter** 750
- **Throat,** sore 711
- **Thrush** 754
- **Tinea circinata** 731
- **Tinea sycosis** 730
- **Tongue,** inflammation of 753
- **Tonsils,** enlarged 791
- **Tonsilitis,** chronic 791
  - And quinsy 713
- **Toothache** 753
- **Torticollis** 832
- **Trachoma** 696
- **Tubercular arthritis** 834
- **Tuberculosis,** pulmonary 725

U

- **Ulcers** 744
  - Of the cornea 698
- **Urethra,** inflammation of 783
- **Urinary organs,** diseases of 774
- **Urination,** difficult 879
- **Urine,** blood in 778
  - Incontinence of 777
  - Retention of 776
  - Retention of in children 800
  - Suppression of 777
- **Urticaria** 748
- **Uterus,** displacement of 808
  - Inflammation of 809
  - Profuse flow of blood from 813

V

- **Vagina,** inflammation of 806
- **Varicella** 795
- **Varicose veins** 741
- **Variola** 752
- **Veins,** varicose 741
- **Verrucoe** 738
- **Vertigo** 861
- **Vomiting** 757
- **Vulva,** inflammation of 806

W

- **Warts** 738
- **Weak heart** 773
- **Wetting the bed** 801
- **Whitlow** 737
- **Whites** 807
- **White swelling** 834
- **Women,** diseases of 805
- **Wool-sorter's diseace** 734
- **Worms** 804
- **Wounds** 828
  - Bleeding from 829
- **Writer's cramp** 881
- **Wry neck** 832

Z

- Zona 749

INDEX

TO

VETERINARY DEPARTMENT.

A

- **Actionomycosis**, 1272
- **Anæmia,** horses, 1232
  - Cattle, 1232
  - Sheep, 1232
  - Dogs, 1232
- **Anthrax**, 1237
  - Apoplectic, in sheep, 1242
  - In dogs, 1233
  - In man, 1233
  - Gloss, 1240
  - Proper, 1239
  - Throat, 1241
  - Tongue, 1240
- **Anthracoid angina**, 1241
  - Disease, 1240
- **Appendix**, 1375
- **Asthma**, 1297

B

- **Balls or pills**, 1375
- **Big legs in horses**, 1336
- **Bleeding**, 1287
  - Spontaneous, 1287
- **Blind staggers**, 1332
- **Blisters**, 1376
- **Blood poisoning,** horses, 1233
  - Cattle, 1233
  - Sheep, 1233
  - Dogs, 1233
- **Blood vessels,** diseases of, 1309
- **Bots in horses**, 1369, 1371
- **Bowels,** inflammation of, 1327
  - Inflammation of, in horses, 1327
  - Inflammation of, in dogs, 1329
- **Brain,** concussion of, 1331
  - Concussion of, in horses, 1331
  - Concussion of, in cattle, 1331
  - Concussion of, in sheep, 1331
  - Inflammation of, 1330
- **Breaking wind**, 1297
- **Breathing apparatus,** diseases of, 1291
  - Abdominal, 1225
  - Difficult, 1225
  - Irregular, 1226
  - Slow, 1225
  - Stertorous, 1225
  - Thoracic, 1225
  - Quickened, 1224
- **Bronchitis**, 1294
  - Chronic, 1296
  - Parasitic, 1371
- **Burns and scalds**, 1341
  - From acids and strong alkalies, 1343

C

- **Canker of the ear in dogs**, 1343
  - External, in dogs, 1343
- **Capped hock,** in cattle, 1348
- **Catarrh of sheep,** parasitic nasal, 1372
- **Cathartics**, 1379
- **Cerebral congestion**, 1332
- **Chest,** dropsy of, 1307
- **Chest founder**, 1352
- **Choking**, 1312
  - In horses, 1314
  - In cattle, 1314
  - In sheep, 1314
  - In dogs, 1314
- **Cholera,** Hog, 1373
- **Chorea in dogs**, 1335
- **Clingfast**, 1351
- **Coffin-joint,** disease of, 1352
- **Colic,** spasmodic, 1319
  - In horses, 1319
  - In cattle, 1319
  - In sheep, 1319
- **Colic,** wind, 1317
  - In horses, 1317
  - In cattle, 1317
  - In sheep, 1317
  - In dogs, 1317
- **Color,** livid or bluish, 1220
- **Consumption**, 1261
  - In cattle, 1261
- **Corn**, 1358
- **Cough**, 1226
  - Dry, 1226
- **Cow,** exterior of, 1398
- **Cow,** pulse of, 1222
  - Skeleton of, 1399
  - Teeth of, 1401
- **Creeping tetter**, 1338
- **Crib-biting and wind-sucking in horses**, 1315
- **Curb**, 1349

D

- **Definitions** 1219
- **Diarrhœa** 1325
- **Distemper in dogs** 1281
- **Doses,** table of 1377
- **Drenches** 1375
- **Drinks** 1375
- **Dropsy of the chest** 1307
- **Dumb madness** 1250

E

- **Ear,** rodent ulceration of in dogs 1343
- **Eczema** 1339
- **Electuaries** 1384
- **Emphysema** 1299
- **Epizootic in horses** 1277
  - In cattle 1280
- **Expressions peculiar to cattle** 1241
  - Sheep 1242
  - Dogs 1243
- **Eye, pink,** in horses 1277
  - In cattle 1280

F

- **Face,** expression of 1912
- **Farcy** 1252
  - Acute 1258
  - Chronic 1259
- **Fardal-bound in cattle** 1320
  - In sheep 1320
- **Fever** 1288
  - Carbuncular in cattle 1242
  - Carbuncular in sheep 1242
  - Catarrhal 1291
  - Catarrhal in horses 1291
  - In cattle 1291
  - In sheep 1291
  - In dogs 1291
  - Intestinal in cattle 1242
  - Mixtures 1383
  - Texan cattle 1286
- **Flatulence in horses** 1317
  - In cattle 1317
  - In sheep 1317
  - In dogs 1317
- **Fleas** 1365
  - In horses 1365
  - In cattle 1365
  - In dogs 1365
- **Flies** 1367
- **Fly-maggots,** in sheep 1365
- **Foals,** rickets in 1344
  - Scours in 1327
- **Fomentations** 1377
- **Foot,** disease of 1352
- **Foot and mouth disease** 1286
- **Founder** 1361

G

- **Gadfly in sheep** 1369
- **General** diseases common to all animals 1228
  - Inflammation 1288
- **General plethora in horses** 1230
  - In cattle 1230
  - In sheep 1230
- **Gid** or turn sick in sheep 1370
- **Glanders and farcy** 1252
  - Acute 1254
  - Chronic 1255
  - Dry 1257
- **Glands,** enlarged 1257
- **Glossitis** 1309
- **Grass ball in cattle** 1320
  - In sheep 1320
- **Grogginess in horses** 1352
- **Grubs** 1367
  - In horses 1365
  - In cattle 1365

H

- **Heart,** diseases of 1309
- **Heaves** 1297
- **Hemorrhages** 1287
- **Herpes circinatus** 1338
- **Hoof,** false quarter of 1357
- **Hoose,** in calves 1371
  - In lambs 1371
- **Horse ail** 1273
- **Husk in calves** 1371
  - In lambs 1371
- **Hydrophobia** 1246
- **Hydrothorax** 1307

I

- **Impaction of the third stomach** in cattle 1320
  - In sheep 1320
- **Indigestion,** acute 1317
  - Chronic 1320
- **Influenza in horses** 1277
  - In cattle 1280
- **Internal form of fever in cattle** 1242
- **Internal** organs of the female dog 1403
  - Parasites 1369
  - Temperature 1226
- **Intestines,** diseases of 1324

J

- **Jaw,** lump 1272
- **Joints,** diseased condition of 1347

L

- **Lampas** 1311
- **Laminitis** 1361
- **Lice** 1366
  - On horses 1365
  - On cattle 1365
  - On sheep 1365
  - On dogs 1365
- **Liniments** 1384
- **Livid** or bluish color of membranes 1220
- **Lockjaw** 1266
  - In cattle 1267
  - In sheep 1267

  - In dogs 1268
  - Mortality from, in horses 1268
    - In cattle 1268
    - In sheep 1268
    - In dogs 1268
- **Lotions** 1385
- **Lump jaw** 1272
  - In horses 1273
  - In cattle 1273
  - In sheep 1273
- **Lungs,** congestion of 1299
- **Lung fever** 1301
- **Lymphangitis** 1336

M

- **Madness** 1246
  - Dumb 1250
- **Maggots** 1367
  - In sheep 1367
- **Mange** 1339, 1368
  - In horses 1365
  - In dogs 1365
- **Medicines and their doses** 1377
- **Membranes,** appearance of 1220
- **Methods of giving medicines** to animals 1375
  - Internally 1375
  - Externally 1376
- **Mouth,** drooling from 1311
  - Dryness of 1220
  - Over-moist condition of 1220
  - Foreign bodies in 1311
- **Muscles** between the ribs, soreness of 1308
  - Of the horse 1392
  - Of swallowing, Paralysis of 1312

N

- **Navicular joint,** disease of 1352
- **Nervous** complications in dogs 1284
  - System, diseases of 1330
- **Nettle rash** 1338

O

- **Organs of digestion,** disorders of 1309

P

- **Pallidity** 1220
- **Parasitic diseases** 1365
- **Parasites,** external 1365
  - Internal 1369
- Parrot-mouth 1310
- **Paunch of cattle,** foreign bodies in 1322
- **Pharyngitis** 1311
- **Pills** 1375
- **Pink eye in horses** 1277
  - In cattle 1280
- **Plethora congestion** 1230
- **Pleurisy** 1306
  - In horses 1306
  - In cattle 1306
  - In sheep 1307
  - In dogs 1307
- **Pleurodynia** 1308
- **Pleuro-pneumonia** of the horse (contagious) 1280
  - Of cattle (contagious) 1286
- **Pneumonia** 1301
  - Acute 1302
  - Bronchial 1302–1304
  - Catarrhal 1302–1304
  - Lobular 1302–1304
  - In horses 1302
  - In cattle 1303
  - In sheep 1303, 1304
  - In dogs 1283, 1303, 1304
- **Points of the horse** 1389
- **Poisons,** antidotes for 1387
  - Special 1388
- **Poultices** 1376
- **Pox** 1269
  - In horses 1270
  - In cows 1270
  - In sheep 1271
  - In dogs 1272
- **Prescriptions** 1379
- **Prominent ills** of the horse 1390
- **Pulse** 1221
  - Of the horse 1221
  - Of the cow 1222
  - Of the sheep 1222
  - Of the dog 1222
  - Beats, symptoms afforded by the variation in 1222
- **Pyæmia** 1233

Q

- **Quarter crack** 1356
- **Quittor** 1361

R

- **Rabies** 1246
  - In the horse 1248
  - In cattle 1248
  - In sheep 1249
  - Furious 1249
  - Furious in dogs 1249
- **Respiratory function,** symptoms afforded by variation of 1223
- **Rickets** 1344
  - In foals 1344
  - In calves 1344
  - In puppies 1344
- **Ringbone** 1351
- **Rinderpast** 1286
- **Ringworm,** contagious 1339
  - False 1338
  - True 1338
- **Roaring in horses** 1294
- **Round worms** 1369
  - In horses 1369
  - In cattle 1369
  - In sheep 1369
  - In dogs 1369

S

- **Sand cracks** 1356
- **Scab,** in the sheep 1365–1367

- **Scalds** 1341
- **Scours** 1327
  - In foals 1327
  - In calves 1327
  - In lambs 1327
- **Scratches in horses** 1340
- **Seedy toe** 1360
- **Septicæmia** 1336
- **Shoeing** 1363
- **Side bone** 1355
- **Skin**, diseases of 1338
- **Skeleton of the horse** 1395
  - Of the cow 1399
  - Of the sheep 1402
  - Of the female dog 1403
- **Sores of the tongue**, in horses 1310
  - In cattle 1310
  - In sheep 1310
  - In dogs 1310
- **Sore throat** 1292
- **Spavin**, bog 1347
  - Bone 1350
- **Spinal cord**, and its coverings 1334
  - Acute inflammation of 1334
  - Cord, chronic inflammation of 1334
- **Spinal cord**, diseases of 1333
- **Splint in horses** 1346
- **Stomach**, disorders of 1316
  - Inflammation of 1322
    - In horses 1322
    - In cattle 1323
    - In sheep 1323
    - In dogs 1323
- **St. Vitus' dance in dogs** 1335
- **Strangles** 1273
  - In dogs 1277
- **Sunstroke** 1332
- **Swallowing**, paralysis of muscles of 1312

T

- **Table of doses** 1377
- **Tape worms** 1369
  - In horses 1369
  - In cattle 1369
  - In sheep 1369
  - In dogs 1369
- **Teeth of the horse** 1397
  - Of the cow 1401
- **Temperature**, external 1226
  - Internal 1226
- **Tetanus** 1266
  - In horses 1266
  - In cattle 1267
  - In sheep 1267
  - In dogs 1268
- **Tetanus, mortality in, in horses** 1268
  - In cattle 1268
  - In sheep 1268
  - In dogs 1268
- **Texan cattle-fever** 1286
- **Thoroughpin** 1348
- **Thread-worms**, in horses 1369
  - In cattle 1369
  - In sheep 1369
  - In dogs 1369
- **Throat anthrax** 1241
  - Sore 1292
- **Thrush** 1359
- **Ticks** 1366
  - In horses 1365
  - In cattle 1365
  - In sheep 1365
  - In dogs 1365
- **Toe crack** 1356
- **Tongue anthrax** 1240
  - Diseases of the, In horses, cattle, sheep and dogs 1309
  - Inflammation of 1309
- **Tonics** 1381
- **Tuberculosis** 1261
  - Abdominal, in cattle 1263
  - General, in cattle 1263
  - In horses 1265
  - In cattle 1261
  - In sheep 1265
  - In dogs 1265
  - Of the udder 1263
- **Turn Sick in sheep** 1370

U

- **Ulcers of the eye in dogs** 1283
- **Urinary organs**, diseases of 1330
- **Urticaria in horses** 1338

V

- **Variola** 1269
- **Veins**, pulsation of 1224
- **Vertigo** in cattle and sheep 1320
  - In horses 1332
- **Veterinary medicine** 1217
- **Vomiting** 1316

W

- **White skit** 1327
- **Wind-sucking in horses** 1315
- **Worms in animals** 1369

Y

- **Yellowness** 1220